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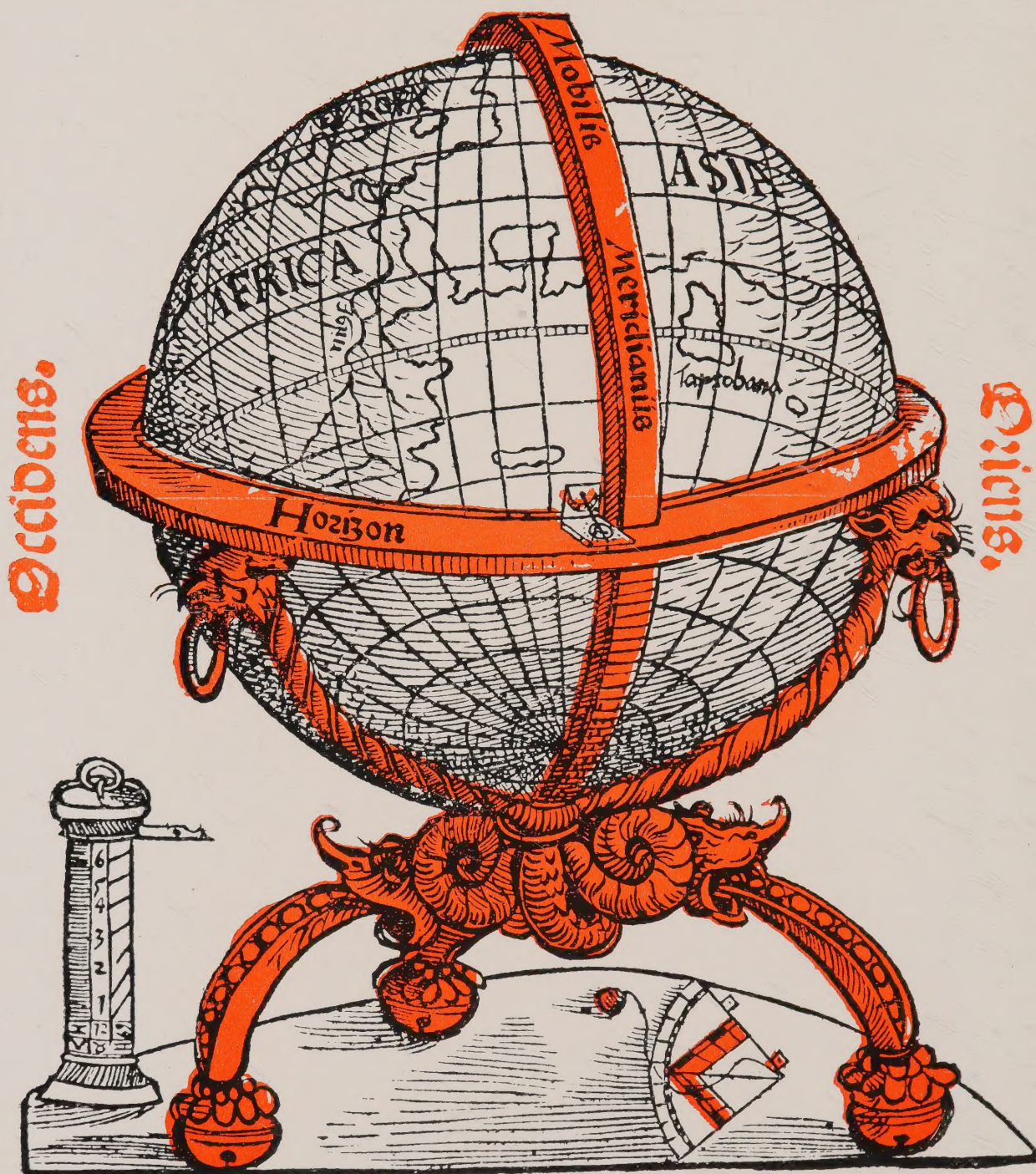
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ASTRONOMY.

I ALBUMASAR. INTRODUCTORIUM IN ASTRONOMIAM octo continens libros partiales. Sm. 4to, a-h8 (h8 blank), woodcut on title, **Gothic letter**, woodcuts and ornamental initials, newly bound in a leaf of an antiphonal.

£5 10 0

Jacobus Prentius for Melchior Sessa: Venice, September 5, 1506

** Not in Brunet. Contains some very curious grotesque initial letters, and the printer's device at end.

2 ALBUMASAR. DE MAGNIS CONJUNCTIONIBUS: annorum revolutionibus, ac eorum profectionibus: octo continens tractatus. Sm. 4to, A-L8 M6, **Gothic letter**, woodcuts, some leaves stained, old calf, re-backed. £6 15 0

Jacobus Pentius de Leucho for Melchior Sessa: Venice, May 31, 1515

* Watt 15 i.
* *

3 ALCHABITIUS. PRAECLARUM SUMMI IN ASTRORUM SCIENTIA PRINCIPIS ALCHABITII OPUS ad scrutanda stellarum magisteria isagogicum pristino candori nuperrime restitutum ab excellentissimo Doctore Antonio de Fantis Tarvisino, qui notabilem ejusdem auctoris libellum de planetarum conjunctionibus nusquam antea impressum, addidit et pleraque scitu dignissima, cum castigatissimo Joannis de Saxonia commentario. Sm. 4to, **Gothic letter**, device at end printed in red and black, woodcut diagrams, old limp vellum, with ties (one missing), FINE COPY.

£.5 15 0

Petrus Liechtenstein: Venice 1521

* COLLATION : a-h 8=64 leaves. Watt, col. 159. The first edition appeared in 1473.

ASTRONOMY—*continued*.

4 BALDE (Jacobus) DE ECLIPSI SOLARI anno MDCLIV, die XII. Augusti, in Europa, a pluribus spectata tubo optico: nunc iterum à Jacobo Balde, è Societate Jesu, tubo satyrico perlustrata libri duo. 16mo (130 by 76 mm.), satirical engraved title-page and two other plates and facetious errata leaf at end. Contemporary vellum over thin wooden boards, with clasps and catches, with the Mexborough bookplate. £3 15 0

Lucas Straub for Johann Wagner: Munich 1662

** FIRST EDITION. Watt, Bib. Britannica, 65r, pp. 11-127. Dialogus inter Alphonsum Persium Pernumiam mathematicum, et Didacum Cyrisatum Poëtam, disputantes de eclipsi anni 1654, deque siderum in haec inferiora influxu: pp. 128-216. De Eclipsi Solari Anni MDCLIV Liber II exhibens ipsum poema: pp. 218-220. Periochæ, Paris. II Antecedentia eclipsis (omens and portents), etc.

5 BERNOULLI (Jean) A SEXCENTENARY TABLE; exhibiting at sight, the result of any proportion, where the terms do not exceed 600 seconds or 10 minutes. 4to, old marbled calf, joints weak. £1 10 0

William Richardson for J. Nourse [etc.]: London 1779

6 BEYER (Hartmann) QUÆSTIONES NOVAE IN LIBELLUM DE SPHAERA Joannis de Sacro Busto. 12mo, pictorial woodcut initials and diagrams, *Italic letter*, errata, leaf at end, printer's device on title and last leaf, red roan roxburghe. £4 0 0

Petrus Brubacius: Frankfurt 1549

** An exceedingly rare edition, the earliest known to Poggendorff, *Handwörterbuch z. Gesch. d. exacten Wissenschaften*, being that of 1579, the earliest in the Bibliothèque Nationale Catalogue being that of 1551. There is no edition in Zeitlinger, Bibliotheca Chemico-Mathematica, and apparently no edition in Houzeau and Lancaster, the only copy which we have been able to trace of this edition is in the British Museum. (Press Mark 533, a.2).

7 BLAEU (Willem) INSTITUTIO ASTRONOMICA: de usu globorum et sphaerarum caelestium et terrestrium . . . Latine reddita a M. Horstensio. Sm. 8vo, device on title, boards. 10/6

Jan and Cornelis Blaeu: Amsterdam 1640

** FIRST EDITION.

8 CAESIUS (Georgius) CATALOGUS, nunquam antea visus, omnium Cometarum secundum Seriem Annorum a Diluvio conspectorum, usque ad hunc praesentem post Christi Nativitatem 1579 annum, cum portentis seu eventuum Annotationibus, et de Cometarum in singulis Zodiaci Signis, Effectibus: ex quibus prodens lector posthac facillime de quovis Cometa judicare poterit, etc. 12mo, *Italic letter*, ornamental woodcut initials, contemporary blind stamped calf over wooden boards (dated on front cover 1579), three-line fillet borders enclosing inner borders of floral design, within the borders two-line fillet panels with small inner and

ASTRONOMY—*continued.*

CAESIUS (GEORGIUS)—*continued.*

outer corner ornaments, large diamond-shaped centre ornaments of floral design, back with raised bands and each compartment containing a small cinquefoil ornament, slightly repaired. £7 10 0

Valentinus Furmannus: Nuremberg 1579

** FIRST EDITION. An exceedingly rare book. Not in the Royal Astronomical Society Catalogue, Poggendorff, *Handwörterbuch z. Gesch. d. exacten Wissenschaften*, Allgemeine Deutsche Biographie, Bibliothèque Nationale Catalogue, or Zeitlinger, *Bibliotheca Chemico-Mathematica*, nor does it appear to be in Houzeau and Lancaster, *Bibliographie Astronomique*. The only copy which we have been able to trace being in the British Museum (Press Mark 8560, aa. 32). This is possibly the earliest printed catalogue of comets known; in any case, it is considerably earlier than any in the list given by Houzeau and Lancaster.

9 CAMPANI (Giuseppe) LETTERA . . . intorno all' ombre delle stelle Medicee nel volto di Giove, ed altri nuovi fenomeni celesti scoperti co' suoi occhiali. Folio, 1 plate, wrapper. £1 10 0

Fabio di Falco: Rome 1665

** RARE. Not in the Royal Astronomical Society Catalogue.

10 CAVALIERI (B.) NUOVA PRATTICA ASTROLOGICA, di fare le direzioni la via rationale, e conforme ancora al fondamento del Keplero per via di logarithmi. [With the *Appendice*.] 2 vol., 16mo, engraved title, modern boards, roan lettering pieces. £2 0 0 1639-40

11 CASSINI (Giovanni Domenico) LETTERE ASTRONOMICHE . . . sopra il confronto di alcune osservazioni delle comete di quest' anno MDCLXV. Folio, wrapper. £3 10 0 *Fabio di Falco: Rome 1665*

** EXCEEDINGLY RARE. Not in Haym, the British Museum, or the Royal Astronomical Society Catalogue.

12 CASSINI (Giovanni Domenico) TABULAE QUOTIDIANAE REVOLUTIONIS MACULARUM JOVIS nuperrime adinventae. Folio, 2 ll., unbound. £1 15 0 *Fabio di Falco: Rome 1665*

** VERY RARE. Not in the Bibliothèque Nationale or Royal Astronomical Society Catalogue.

13 CASSINI (Giovanni Domenico) THEORIAE MOTUS COMETAE ANNI MDCLXIV pars prima. Ea praeferens, quae ex primis observationibus ad futurorum motuum praenotionem deducere potuere, cum nova investigationis methodo, tum in eodem, tum in comete novissimo anni MDCLXV ad praxim revocata. Folio, diagrams, some leaves stained, title repaired, wrapper. £3 10 0

Fabio di Falco: Rome 1665

ASTRONOMY—*continued*.CASSINI (GIOVANNI DOMENICO)—*continued*.

** Library stamp on title ("Bibl. Dom. Prof. Rom. f")

EXCEEDINGLY RARE. Not in the British Museum the Bibliothèque Nationale Catalogue, or the Royal Astronomical Society Catalogue.

COLLATION: 2 ll., A-N 2, O6.

It will be noticed that the words "pars prima" occurs in the title: owing to the rarity of this volume we have been unable to ascertain whether a second part was ever published; we therefore sell it as described. In this copy a considerable portion of the book is in duplicate; this is obviously a binder's blunder.

14 [CASSINI (Giovanni Domenico)] DE ALIIS OBSERVATIONIBUS MACULARUM MARTIS. Folio, 1 plate and 1 leaf of text, unbound. 15/-

H. H. de Ducciis: Bologna 1666

15 [CASSINI (Giovanni Domenico)] DE PERIODO QUOTIDIANAE REVOLUTIONIS MARTIS. Folio, 2 ll. (one blank), unbound. £4 5 0

H. H. de Ducciis: Bologna 1666

** Cassini was the first to determine the diurnal period of Mars.

VERY RARE. Not in the British Museum or Royal Astronomical Society Catalogue.

Thomas. *Biog. Dicty*, p. 536.

16 CASSINI (Giovanni Domenico) MARTIS CIRCA PROPRIUM REVOLUBILIS OBSERVATIONES Bononiae . . . habitae. 4to, 1 plate and one page of text, unbound. £3 0 0

H. H. de Ducciis: Bologna 1666

** RARE. Not in the Royal Astronomical Society Catalogue.

17 CLAVIUS (Christophorus) IN SPHAERAM JOANNIS DE SACRO Bosco commentarius, nunc iterum ab ipso auctore recognitus, et, multis ac variis locis locupletatus. Sm. 4to, 16 ll., 468 pp., numerous diagrams, old citron morocco, gilt three-line borders on sides, monogram repeated six times on back, Arms in gold on sides. £5 10 0

Dominicus Basa (at end: Franciscus Zanettus) Rome 1581

** Houzeau and Lancaster 2678.

18 CLAVIUS (Christophorus) FABRICA ET USUS INSTRUMENTI ad HOROLOGIORUM descriptionem peropportuni. Accessit ratio describendarum horarum a meridie et media nocte exquisitissima, et NUNQUAM ANTEHAC IN LUCEM EDITA. Sm. 4to, 2 ll., 151 pp., diagrams, contemporary vellum. £2 10 0

Title: *Bartholomaeus Grassius: Rome 1586*

At end: *Jacobus Ruffinellus: Rome N.D.*

ASTRONOMY—*continued*.

19 COMPUTUS NOVUS ECCLESIASTICUS totius fere astronomiae fundamentum pulcherrimum continens. Sm. 4to, **Gothic letter**, woodcut at end (Saint Anna and Saint Mary sitting with the Child between them), woodcut diagram (circle of dominical letters), contemporary manuscript notes, bound in a leaf from an early printed book over boards.

£12 15 0 *Johann Winterburg: Vienna for Bernard Melipola:*

Olmütz 1508

** Houzeau and Lancaster, 13718; Denis, 21; Mayer, I, p. 157.

RARE. Not in the British Museum or Panzer (who quotes a very similar edition of the same date, but without mention of printer or place, "ad impensas Bernardi Meliss. de Olmuntz"). Denis suggests Andreas Stivor, Canon of Olmütz as author.

The object of this book is to enable ecclesiastics to find out when Easter will fall.

Johann Winterburg, or Winterburger, was the first printer in Vienna, whose name is known. He was born at Winterburg, not far from Kreuznach, in the Province of Sponheim. He printed from 1492 until 1519, when he died. Some authorities believe he was at work as early as 1482. He was acquainted with various Hungarian celebrities, and printed several books of Hungarian interest; there is also a tradition that he came into contact with Matthias Corvinus, King of Hungary, and ardent book-collector, who died at Vienna in 1490.

20 [COPERNICUS (Nicolaus, *founder of heliocentric astronomy*, 1473-1543)] CAPELLA (M. M. F.) DE NUPTIIS PHILOLOGIAE ET MERCURII, libri II. Ad haec septem artibus liberalibus libri ejusdem singuli. . . GAEOMETRIA, sextus, ARITHMETICA, Septimus, ASTRONOMIA, Octavus, MUSICA, Nonus. [Device.] Folio, woodcut initial letters (one very large and fine) and ornaments, device repeated at end, slightly stained, half calf, repaired. £2 5 0

Henricus Petrus: Basle, March 1532

** Heckethorn: *Printers of Basle*, p. 157, No. 12. It has been suggested that this book, which describes Venus and Mercury as revolving round the sun, gave Copernicus the hint which led to his great discovery. Capella lived about 500 A.D. (Thomas: *Dict. of Biog.*, p. 512).

21 [COSTARD (George)] THE USE OF ASTRONOMY IN HISTORY AND CHRONOLOGY, exemplified in an inquiry into the fall of the stone into the Aegospotamos, said to have been foretold by Anaxagoras. In which is attempted to be shewn, that Anaxagoras did not foretell the fall of that stone; but the solar eclipse in the first year of the Peloponnesian War. That what he saw was a comet at the time of the Battle of Salamis: and that this battle was probably fought the year before Christ 478; or two years later than it is commonly fixed by chronologers. 4to, wrapper. 15/-

For L. Davis and C. Reymers: London 1764

** George Costard, (1700-1782) Fellow of Wadham College, Oxford; M.A., 1733; Vicar of Whitchurch, Dorset; Vicar of Twickenham, 1764-82; published tracts on biblical criticism, 1733-52; and treatises on the history of astronomy, especially in antiquity, 1746-67.

ASTRONOMY—*continued*.

22 DERHAM (W[illiam]) ASTRO-THEOLOGY: or a demonstration of the being and attributes of God from a survey of the heavens. Sm. 8vo, folding diagrams, contemporary mottled calf, gilt 2-line borders, gilt back, with the bookplate of George Garnier, FINE COPY. £1 18 0

For W. Innys and R. Manby: London 1738

* Seventh edition. Not in Lowndes, Watt or the British Museum.

23 DUDITH (Andreas) DE COMETARUM SIGNIFICATIONE COMMENTARIOLUS. . . . Addidimus D. Thomae Erasti eadem de re sententiam. Sm. 4to, old calf, roxburghe. £1 12 0

Peter Perna: Basle 1579

** Houzeau and Lancaster, 5612.

24 ESTWOOD (John) SUMMA ASTROLOGIAE JUDICIALIS. Folio (12 by 7 $\frac{1}{16}$ in.), [2 ll., a-i8 k4, l6, m8, n9, o-z, & A-D8]. Roman letter, double columns, 55, 56, 57 and 58 lines to page, headlines, page numerals and signatures, without catchwords, woodcut initial letters (coloured), also initial spaces (filled in), woodcuts, some leaves remargined, slightly wormed and stained, old calf gilt, rebaked. £46 0 0

[Joannes Lucilius Santritter]: Venice, July 7, 1489

* British Museum Catalogue of Incunabula, part v, p. 462. Hain-Copinger *6685, Proctor 5184. THE ONLY EDITION OF THIS BOOK PRINTED IN THE FIFTEENTH CENTURY, AND THE ONLY BOOK PRINTED BY SANTRITTER ALONE.

25 FERGUSON (J.) A PLAIN METHOD OF DETERMINING the parallax of Venus, by her transit over the Sun, and from thence, by analogy the parallax and distance of the Sun, and of all the rest of the planets. Sm. 4to, folding plates, wrapper. £3 10 0

For the Author: London 1761

26 FINE (Oronce, *Mathematician*, 1494-1555) SPHAERA MUNDI, sive cosmographia quinque libris recens auctio et emendatis absoluta: in quantum prima astronomiae pars, tum geographiae, ac hydrographiae, rudimenta pertractantur. Sm. 4to, numerous woodcuts and initial letters, upper joint a little worn. £2 5 0

Michel de Vascosan: Paris 1552

* Houzeau and Lancaster 2379.

27 FLORAVANTI (F.) L'ABITATORE DEL SOLE, ovvero Discorsi Fisici, e Morali fatti ad un Curioso, in due Colloqui, ne'quali so provi, le Stelle essere alcune Soli, ed altre, abitate da differenti Creature: e nel descrivere la loro vita, e costumi, so presenta un modello all'Uomo, Come doveria vivere, per divenire felice. 8vo, contemporary English red morocco, broad dentelle borders of thistles and acorns, large centre ornament with leafy scrolls in top and bottom spaces, gold-tooled back and edges of boards, inside gold dentelles, marbled end paper. £2 0 0

J. Chrichley: London 1743

ASTRONOMY—*continued*.

28 [FOKKENS (Johann)] ΙΑΝΣΕΛΗΝΟΣ ΕΚΛΕΠΗΤΙΚΗ ΔΙΑΥΓΑΣΟΥΣΑ: id est dissertatio astronomica quae, occasione ultimi lunaris anni 1638 deliquii, manuductio sit ad cognoscendum: I. Statum Astronomiae, praesertim Lansbergianae; II. Novorum phenomenon exortum et interitum. Autore Joanne Phocylide Holwarda. 16mo, 12 ll., 288 pp., diagrams, old calf, with the Arms of François Auguste De Thou (eldest son of Auguste de Thou) and monogram "A.G." (Auguste and Gasparde De Thou) on back (four times), with the book label of J. W. Six. £6 15 0

Idzardus Albertus for himself and Joannes Fabianus Theuring: Franekeræ, 1640 (1649)

** Not in Brunet, Watt, British Museum, Zeitlinger, *Bibliotheca Chemico-Mathematica*, Poggendorff, *Biographisch-Literarisches Handwörterbuch zur Geschichte der exacten Wissenschaften*, Houzeau and Lancaster, *Bibliographie générale de l'astronomie*, Bibliothèque Nationale Catalogue, Royal Astronomical Society Catalogue, Ebert, Graesse, Georgi, Zedler, *Nouvelle Biographie Générale*, or *Biographie Universelle*.

29 FONTENELLE (Bernard Le Bovier de) A CONVERSATION ON THE PLURALITY OF WORLDS. Translated [by William Gardiner] . . . To which is added Mr. Addison's defence of the Newtonian philosophy. 12mo, old sheep. £1 5 0 *For Daniel Evans: London 1758*

** An exceedingly rare edition of which we have been unable to trace another copy. Fontenelle attempts to prove that the other planets are inhabited. An account of Addison on the Newtonian philosophy will be found in Brewster's *Memoirs of Sir Isaac Newton*, 1855, vol. I., p. 334.

GALILEI (GALILEO).

30 SYSTEMA COSMICUM: in quo Quatuor Dialogis, de Duobus Maximis Mundi Systematibus, Ptolemaico et Copernicano, utriusque rationibus Philosophicis ac Naturalibus indéfinité propositis, disseritur. 8vo, engraved frontispiece with full-length portraits of Aristotle, Ptolemy, and Copernicus. Contemporary calf, one joint a trifle worn, *a fine copy, with the blank leaf bearing the initial "A" before title*. £2 10 0

Thomas Dica: London 1663

** Not in the Royal Astronomical Society's Catalogue.

31 OPERE DI GALILEO GALILEI, LINCEO, NOBILE FIORENTINO, già lettore delle matematiche nelle università di Pisa, e di Padova, di poi Sopra ordinaria nella studio di Pisa, primario filosofo, e matematico del Serenissimo Gran Duca di Toscana. In questa nuova editione insieme raccolte, e di varii trattati dell' istesso autore non più stampati accresciute. Al Serenissimo Ferdinando II, Gran Duca di Toscana. 4to, (8 $\frac{1}{16}$ by 6 $\frac{5}{16}$ in.), 2 vols. Frontispiece portrait, folding plate diagrams, some leaves browned, contemporary vellum. £3 10 0

Per gli H. H. del Dozza: Bologna 1656

** Zeitlinger. *Bib. Chemico-Mathematica*, No. 1435-1436. Edited by Carlo Manolesi. THE FIRST COLLECTED EDITION OF GALILEO'S WORKS.

ASTRONOMY—*continued.*GALILEI (GALILEO)—*continued.*

- 32 FRISI (Paolo) ELOGIO DEL GALILEO. 8vo, contemporary vellum.
 £1 0 0 *Federico Agnelli: Milan 1775*

** Not in the British Museum or Bibliothèque Nationale Catalogue.

- 33 SARSIUS (Lotharius) LIBRA ASTRONOMICA AC PHILOSOPHICA qua Galilaei Galilaei opiniones de cometis a Mario Guiducio in Florentina expositae, atque in lucem nuper editae, examinantur. Sm. 4to, diagrams, old Italian decorative boards. £3 3 0

Marcus Naccarinus: Perugia 1619

** FIRST EDITION. Brunet, V, 141. Attributed to Orazio Grassi Galileo answered it in his *Saggiatore*.

- 34 GASSENDI (P.) TYCHONIS BRAHEI, Equitis Dani, astronomorum coryphaei, vita . . . Accessit Nicolai Copernici, Georgii Peurbachii, et Joannis Regiomontani, astronomorum celebrium, vita. Editio secunda auctior et correctior. [De vita et morte Dn. Tychonis Brahei, etc., oratio, D. Johan. Jessenii. Elegia in obitum ejusdem Dn. Tychonis Brahe (by Kepler). Elixir Tychonis Descriptio. Stellarum octavi orbis inerrantium accurata restitutio. Carmina Tychonis.] 4to. Portraits of Tycho Brahe and Copernicus, and woodcut diagrams. Contemporary calf, rebacked. £5 15 0

Adrian Vlacq: Hague 1655

** Brunet, Vol. VI., No. 30827.

CONTENTS: The collection of PORTRAITS of ASTRONOMERS at Uraniburg (Tycho Brahe's observatory), KEPLER, TYCHO BRAHE'S PAPER MILL, WILLIAM GILBERT, author of *De Magnete*, REGIOMONTANUS as the INVENTOR of PRINTING.

There are two references to Axil Guldenstern, a relative of Tycho Brahe. In his *astronomiae instauratae mechanica* (1602) Brahe gives the escutcheons of sixteen Danish nobles among whom are persons named Rosenkrans and Guldestere. It has been suggested that SHAKESPEARE borrowed these names from this book when he was writing *Hamlet* (first printed in 1603). It is probable that the "Guldestere" of the coat of arms is identical with the "Axillus Guldensternus" here alluded to.

- 35 GASSENDI (Pierre) INSTITUTIO ASTRONOMICA, juxta hypotheseis, tam veterum, quam recentiorum. Cui accessit Galilaei Galilaei *Nuncius Sidereus*, et Joannis Kepleri *Dioptrice*. Sm. 8vo, woodcuts, old calf, rebacked. £3 0 0

London, for Henry Dickinson: Cambridge 1683

** Bib. Chem. Math. 1476. VERY RARE. Not in Houzeau and Lancaster, Brunet, Watt, Lowndes, or Biog. Univ.

ASTRONOMY—*continued*.

36 GEMMA (Reinier, *Frisius*, 1508-1555). DE PRINCIPIIS ASTRONOMIAE & COSMOGRAPHIAE, Deq. vsu Globi ab eodem editi. Item de Orbis diuisione, & Insulis, rebusq. nuper inuentis. 12mo, *Italic letter*, woodcut of globe on title, woodcut initials, full-page woodcut at p. 12, mathematical diagrams, Steelsius's device at end, original limp vellum, with end papers consisting of fragments from a fourteenth century French chronicle. £6 5 0

Joannes Graphaeus for Joannes Steelsius: Antwerp 1553

** 231 pp. The edition of 1557 is the earliest known to Watt. Bib. Nat. Catalogue, lviii, 979. Not in Bibliotheca Chemico-Mathematica. Reference to America at p. 21, chapter 20, "De insulis nuper inventis." Chapter 30, "De America." At the end there is a catalogue of fixed stars giving a magnitude, right ascension, and declination.

37 HALLEY (Edmund) ASTRONOMICAL TABLES . . . for computing the places of the sun, moon, planets, and comets. 4to, portrait, contemporary calf, worn. £3 10 0

For William Innys: London 1752

** FIRST EDITION in English.

HALLEY'S COMET—SEE No. 48 NESSE.

38 HOOKE (Robert) AN ATTEMPT TO PROVE THE MOTION OF THE EARTH from observations. Sm. 4to, folding plate, wrapper. £2 10 0
J. Martyn: London 1674

39 HEVELIUS (Joh.) SELENOGRAPHIA: Sive, Lunae descriptio. Folio, engraved title and many engraved plates, portrait of author wanting, late 17th century English red morocco, border formed by broad dentelle lines intersecting at corners decorated with elaborate arabesque ornaments, the centre panel filled with interlacing floriate scrolls, dots, stars, etc., gold-tooled back and edges of boards, g.e., book label "The Gift of Mr. Thomas Heatley, Citizen and Iron-Monger of London, to the Mathematical School in Christ's-Hospital. Anno Dom. 1700." A MAGNIFICENT BINDING OF VERY DELICATE DESIGN. £30 0 0

Typis Hünefeldianis: Gedani [Dantzig] 1647

** J. Hevelius, 1611-1687, a famous astronomer and native of Dantzig. The first important book on the Moon, including over 100 engraved plates covering every aspect of the satellite.

40 HILL (JOHN) AN ALLARM TO EUROPE: By a Late Prodigious Comet seen November and December 1680. With a predictive discourse. Together with some preceding and some succeeding causes of its sad Effects to the East and North Eastern parts of the World. Namely, England, Scotland, Ireland, France, Spain, Holland, Germany, Italy, and many other places. Folio (11¼ by 7½ ins.), 4 pp., woodcut of comet on title. *Uncut; in fine state.* £3 10 0

H. Brugis for William Thackeray: London [1681]

ASTRONOMY—*continued*.

41 HUYGENS (Christianus) COSMOTHEOROS, sive De Terris Coelestibus, earumque ornatu, conjecturae ad Constantium Hugenum, Fratrem, Guilielmo III, Magnae Britanniae Regi, a secretis. 4to, SEVERAL ENGRAVED FOLDING PLATES showing the movements of the Solar system, calf roxburghe. £1 0 0 *Adrian Moetjens: Hague 1699*

** Not in Brunet. Huygens was a famous Dutch astronomer and geometer, and friend of Newton, who called him "Summus Hugenus." The above posthumous work was dedicated to his elder brother, who, it will be seen by the title, was secretary to William III of England. "Un dernier ouvrage de lui, fort singulier. . . ."—Maurice.

42 HYGINUS. POETICON ASTRONOMICON. 4to, large woodcut on title and numerous cuts in text, printer's device of cat and mouse at end, modern brown levant morocco, plain inside gold dentelles, t.e.g. £5 0 0 *Melchior Sessa: Venetiis, 15 Sept., 1512*

** This edition is exceedingly rare, as the Prince d'Essling is only able to quote the copy in Berlin (I 289).

43 KEPLER (Johann) VLACQ (Adrian) EPHEMERDES MOTUUM COELESTIUM ad annos vulgaris aerae 1633, 1634, 1635, et 1636. Summa diligentia in luminarium motibus et zyzygiis, ex tabulis Lansbergianis ab Adriano Vlacco, Goudano; in reliquis planetis ex tabulis Rudolphinis a Joanne Keplero, Mathematico Caesareae Majestatis, supputata. Cum instructione super earum usu. Sm. 4to, woodcut diagrams, contemporary vellum. £3 10 0 *Petrus Rammasenius: Gouda 1632*

44 LICETUS (Fortunius) DE LUNAE SUBOBSCURA LVCE. Prope coniunctiones, et in eclipsibus observata. In quibus ad opticen, astronomiam, physiologiam, et alias disciplinas attinentia plurima dogmata pulchra et difficilia diligenter explicantur. 8vo, device on title, modern boards. £1 0 0 *Nicolas Schirattius: Utini 1642*

** Not in Brunet.

45 LLOYD (Lodovic) THE CONSENT OF TIME, discipherring the errors of the Grecians in their Olympiads, the uncertaine computation of the Romanes in their Pentetirydes and the building of Rome, of the Persians in their accompt of Cyrus, and the vanities of the Gentiles in fables of antiquities, disagreeing with the Hebrewes, and with the sacred histories in consent of time. Wherein is also set downe, the beginning, continuance succession and overthrowes of kings, kingdoms, states, and governments. Sm. 4to, slightly waterstained, title written on, old calf, repaired. £2 5 0

George Bishop and Ralph Newbery: London 1590

** FIRST EDITION. D.N.B. xi., p. 1308, No. I.

ASTRONOMY—*continued*.

46 LONGOMONTANUS (Christian S.) ASTRONOMIA DANICA.
Folio, diagrams, contemporary calf, worn. £1 0 0

Jan and Cornelis Blaeu: Amsterdam 1640

47 MOXON (Joseph) A TUTOR TO ASTRONOMI AND GEOGRAPHIE.
Or an Easie and Speedie way to know the use of both the Globes,
celestial and terrestrial. Sm. 4to, diagrams, calf. £1 0 0 1670

48 [NESSE (Christopher)] A TRUE ACCOUNT OF THIS PRESENT
BLASING-STAR, presenting itself to the view of the world this August 1682,
with sundry considerable remarks and observations thereupon. [Signed,
"Truly so thus prayeth, C.N."] Folio, single leaf. £4 10 0

For L[angly] Curtis: London 1682

** B.M.C. "N" I. 13; Plomer, *Dict. of printers*, 96. An interesting
broadside relating to the historic appearance of HALLEY'S COMET in 1682,
when Halley used it to demonstrate the periodicity of these bodies. Christopher
Nesse gives an account of the comet from the standpoint of the man in the street.

49 NEWTON (Isaac, *Knight*) THE CHRONOLOGY OF ANCIENT
KINGDOMS AMENDED. 4to, contemporary calf. £2 0 0

J. Tonson: London 1728

** FIRST EDITION. D.N.B. xiv. 391. An attempt to ascertain the date
of ancient events by astronomical evidence.

50 ORIGANUS (David) ANNORUM PRIORUM 30 INCIPIENTIU ab
anno Christi 1595, et disinentium in annum 1624, ephemerides Bran-
denburgicae coelestium motuum et temporum; summa diligentia in
luminaribus calculo duplici Tyconica et Prutenico, in reliquis planetis
Prutenico seu Copernicano elaboratae . . . et accomodatae hori-
zonti Francofurtano ad Viadrum. . . . Sm. 4to, diagrams, original
calf. £4 0 0

Joannes Eichorn for the Author: Frankfort-on-the-Oder, 1609

** FIRST EDITION. British Museum Catalogue "E.," xxxii, p. 105.
PROVENANCE: [—] Dundas Viscount Melville (armorial bookplate: Franks 9287-
9288).

51 PTOLEMAEUS (Claudius) LIBER QUADRIpartiti. [With the
commentary of Haly Heber Rodan] Centiloquium ejusdem. [Both
translated from the Arabic by Aegidius Tebaldinus]. Centiloquium
Hermetis [Trismegisti]. Ejusdem de stellis beibenniis. Centiloquium
Bethem, et de horis planetarum. Ejusdem de significatione triplicitatum
ortus. Centum quinquaginta propositiones [Almeonis] Almansoris
[Translated from the Arabic by Plato of Tivoli]. Zahel de interroga-

ASTRONOMY—*continued*.PTOLEMAEUS (CLAUDIUS)—*continued*.

tionibus. Ejusdem de electionibus. Ejusdem de temporum significationibus in judiciis. Messahallach [Macha-Allah] de receptionibus planetarum. Ejusdem de interrogationibus. Epistola ejusdem cum duodecim capitulis. Ejusdem de revolutionibus annorum mundi [Translated from the Arabic by Johannes Hispalensis] [The whole edited by Hieronymus Salius]. Folic, Gothic letter (2 sizes), [2] + 152 leaves, 2 columns, ornamental woodcut initials of several sizes and designs, (uncoloured), Octavianus Scotus' device at end, with signatures, manuscript marginal notes, last leaf soiled, a few wormholes, modern calf. A LARGE COPY measuring 309 × 214 mm. (B.M. copy—295 × 205 mm.); old plain English calf, rebaked. £20 0 0

Bonetus Locatellus for Octavianus Scotus: Venice, December 20, 1493

** SECOND EDITION of the two essays by Ptolemy.

FIRST EDITION of Haly Heben Rodan's commentary and of many of the other tracts.

Hain *13544; Proctor *5050.

VERY RARE. Not in Newbery Library Handlist, Biblioteca Chemico-Mathematica, Royal Astronomical Society Catalogue, Caillet: *Bibliographie des sciences occultes*; Graesse: *Bibliotheca Magica*, Ladrague: *Sciences Secrètes*, Brunet: *Manuel*, Watt: *Bibliotheca Britannica*, or Zedler: *Encyclopaedia*.

An important collection of Latin translations of Arabian Astrological works, and of Arabic translations from the Greek.

Hain must either have seen a copy with a variant title-page, or have been very careless. He reads "triplicatum" for "triplicitatum," "dictionibus" for "electionibus," and "tepor 4" for "tepo 4." This copy reads in error "recepriionibus" for "receptionibus": this mistake is corrected in Hain and the British Museum Catalogue, Vol. V, p. 442.

Macha-Allah was an Arabian writer of Spain and a Jew by religion (*Bibliographie Universelle*, Vol. 26, pp. 40-41; Casiri: *Bibliotheca Arabico-Hispanica*, Vol. I., p. 434. Not in Fuerst: *Bibliotheca Judaica*, Jewish Encyclopaedia, Graetz: *History of the Jews*, Block and Lévy: *Histoire de la littérature Juive*, Antonio: *Bibliotheca Hispana Vetus*, or Ticknor: *History of Spanish literature*).

The authenticity of Ptolemy's *Quaddripartitum* and *Centiloquium* has been questioned, but while internal evidence supplies no grounds for doubting the ascription of the former, the latter is undoubtedly spurious. (*Encyclopaedia Britannica*, Vol. xxii., p. 623; Christ: *Geschichte der Griechischen Litteratur*, Vol. II., p. 899).

52 RHODIUS (Ambrosius, M.D.) AMBROSII RHODII, MATHEMATICI ET MEDICI, COMETA PER BOOTEM [*Large woodcut*]. Sm. 4to, woodcut diagrams, some leaves slightly frayed, modern boards. RARE. £4 0 0

For Paul Helwig [Wittenberg 1620?]

** COLLATION: A—D4 E2. The British Museum copy is imperfect. CONTENTS: On the origin and nature of comets; The comet passing through Bootes; Observations [*etc.*].

ASTRONOMY—*continued*.

53 [SACRO BOSCO (Joannes de)] SPHERA VOLGARE. Nova-
mente tradotta con molte notande additioni di geometria, cosmographia,
arte navigatoria. . . . Autore M. Mauro. Sm. 4to, *Italic letter*,
title in woodcut border, numerous woodcuts, first leaf torn, old Spanish
mottled calf. £10 10 0

Bartolommeo Zanetti: Venice, October 1537

** FIRST EDITION of the first Italian translation. VERY RARE. Not
in the Royal Astron. Soc. Cat.

A2b: Woodcut with terrestrial globe bearing the name America (here spelt
"Ametrica"). H3a: A similar woodcut. M1a—O1b: "Seguita alcuni secreti
dell' arte navigatoria."

Joannes de Sacro Bosco was an Englishman whose real name appears to
have been John Holywood.

Brunet, *Sup.* 986. Haym IV., p. 87, No. 1. D.N.B. IX., p. 1111. Hou-
zeau and Lancaster, 1662.

SEE ILLUSTRATION ON COVER.

54 SELLER (John) A POCKET BOOK, containing severall choice
Collections in Arithmetick, Astronomy, Geometry, Surveying. . . .
By John Seller, Hydrographer to the King. Sm. 8vo (5½ by 3¾ in.),
engraved title and 86 leaves, with the text engraved on one side only,
and containing diagrams, maps (including America), etc., and two
volvelles, polished calf extra, inside dentelles, g.e., by F. BEDFORD, from
the Huth library, FINE COPY, RARE. £8 10 0

To be sold by John Seller at his Shopp at the Hermitage, Wapping [1685]

55 [SERRA (Salvator)] MARTIS REVOLUBILIS OBSERVATIONES
ROMANAE ab afflictis erroribus vindicatae. Folio, folding plates (repaired),
wrapper. £2 15 0 *Jacobus Dragonellus: Rome 1666*

** EXCEEDINGLY RARE. Not in the British Museum, Royal Astro-
nomical Society or Poggendorff.

56 SHEERES (Sir Henry) AN ESSAY ON THE CERTAINTY AND CAUSES
OF THE EARTH'S MOTION ON ITS AXIS, etc. Sm. 4to, some lower edges
uncut, modern wrapper. 10/- *For Jacob Tonson: London 1698*

57 SINCLAIR (George) THE PRINCIPLES OF ASTRONOMY and
Navigation: or, A Clear, Short yet Full Explanation, of all Circles of
the Celestial, and Terrestrial Globes, and of their Uses, being the whole
Doctrine of the Sphere, and Hypotheses to the Phenomena of the
Primum Mobile. To which is Added a Discovery of the Secrets of
Nature, which are found in the *Mercurial Weather-Glass*, &c. As also
A New Proposal for *Buoying up a Ship* of any Burden from the Bottom
of the Sea. 12mo, old mottled calf. £7 10 0

Printed by the Heir of Andrew Anderson: Edinburgh 1688

58 SLOP (Joseph) OBSERVATIONES SIDERUM HABITE PISIS in specula
academica ab anno LXXVIII ad annum LXXXII vertentis saeculi
XVIII. 4to, contemporary half sheep. £1 5 0

Aloysius Raphaellius: Pisa 1789

Carta cosmographica, con los nomb

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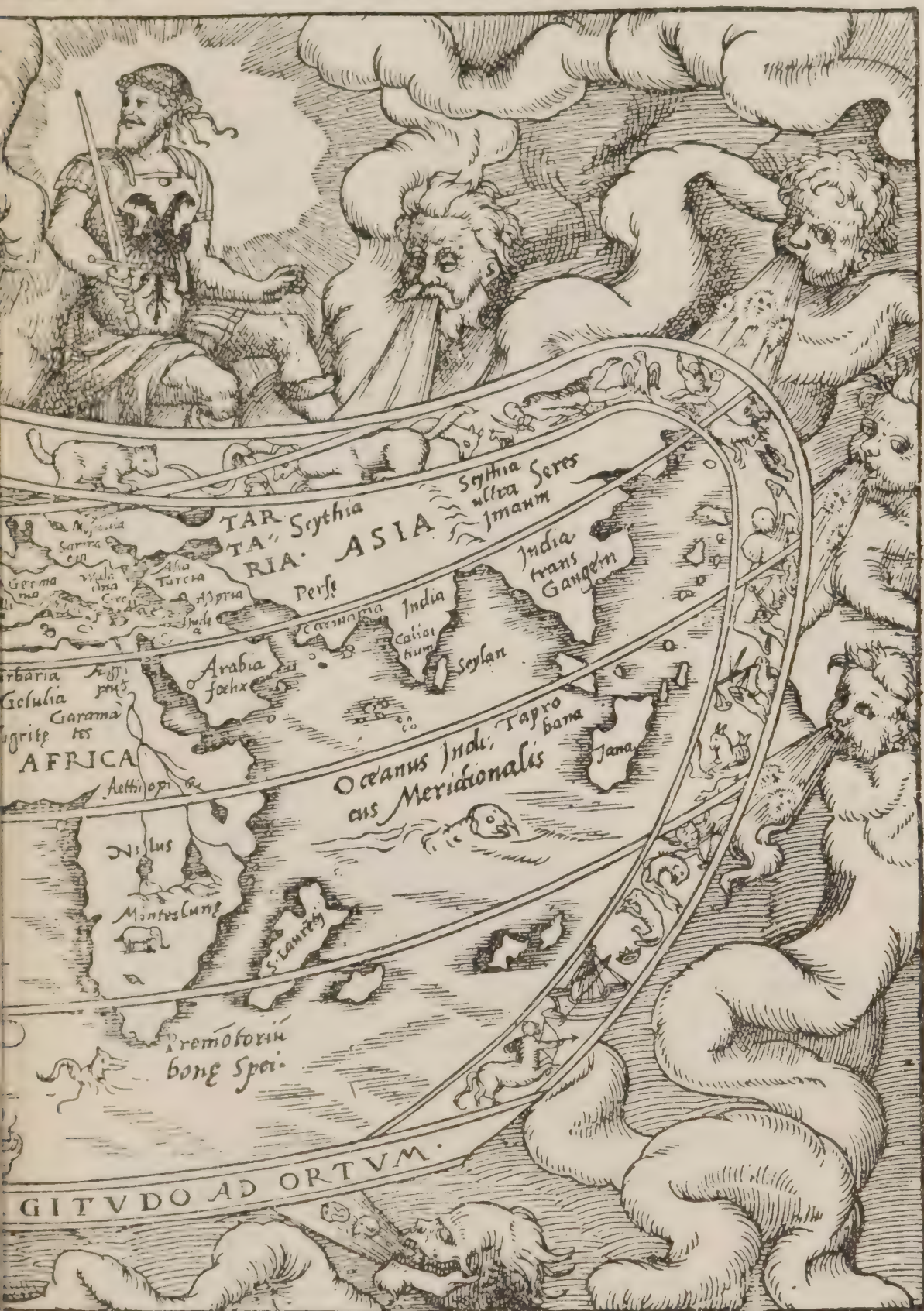
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FIRST SPANISH EDITION.
(reced).

ASTRONOMY—*continued*.

59 SMETHURST (Gamaliel) AN EXPLANATION AND USE OF THE CONSTELLARIUM, or apparent astronomy. 4to, wrapper. 10/-
W. and J. Richardson for J. Dodsley [etc.] : London 1771

60 SNELLIUS (Willebrordus) DESCRIPTIO COMETAE, qui anno 1618 mense Novembri primum effulsit. Huc (*sic*) accessit Christophori Rhotmanni . . . descriptio accurata cometæ anni 1585. Nunc primum a Will. Sn., R.F., in lucem edita. Sm. 4to, diagrams, contemporary limp vellum (back defective). £1 15 0

Ex Officina Elzeviriana : Leyden 1619

** FIRST EDITION. Watt 867 f. CONTENTS (*inter alia*) : Pp. 88-9 : A table of the position of the comet of 1585 for every day of its visibility (October 9 to November 10); Pp. 155-6 : A description of the general appearance of the comet of July, 1596. PROVENANCE : James Broun Craven, Kirkwall (ticket).

60a STOEFFLER (Johann) ELUCIDATIO FABRICAE USUSQUE ASTROLABII. 12mo, device on title (Silvestre 112), Italic letter, diagrams, library stamp on title, folding plates misbound at end, bound in the vellum leaf of an old manuscript. £15 10 0

Guillaume Cavellat : Paris 1553

** B.M. 408, Houzeau and Lancaster 3256, Bib. Chem. Math. 15095. FIRST ISSUE (the "i" of "in" in the second line of the heading of f. 4^a printed in Italic in error—corrected in the British Museum copy).

SEE ILLUSTRATION ON PAGE 19.

61 A TRUE ACCOUNT OF THAT FAMOUS CONJUNCTION of Saturn and Jupiter, on Monday, the 9th of October, 1682. Folio, single sheet. £1 10 0

For J[onas] Hyther : London 1682

** Plomer : *Dict. of printers*, 167. OF EXCESSIVE RARITY. We have been unable to trace another copy.

62 WARD (Seth, *Bishop of Salisbury*, 1617-1689) ASTRONOMIA GEOMETRICA : ubi Methodus proponitur qua Primariorum Planetarum Astronomia, sive Elliptica, sive Circularis, possit geometricè absolvi. Sm. 8vo, title in red and black, numerous diagrams, old calf. £2 15 0

James Flesher : London 1656

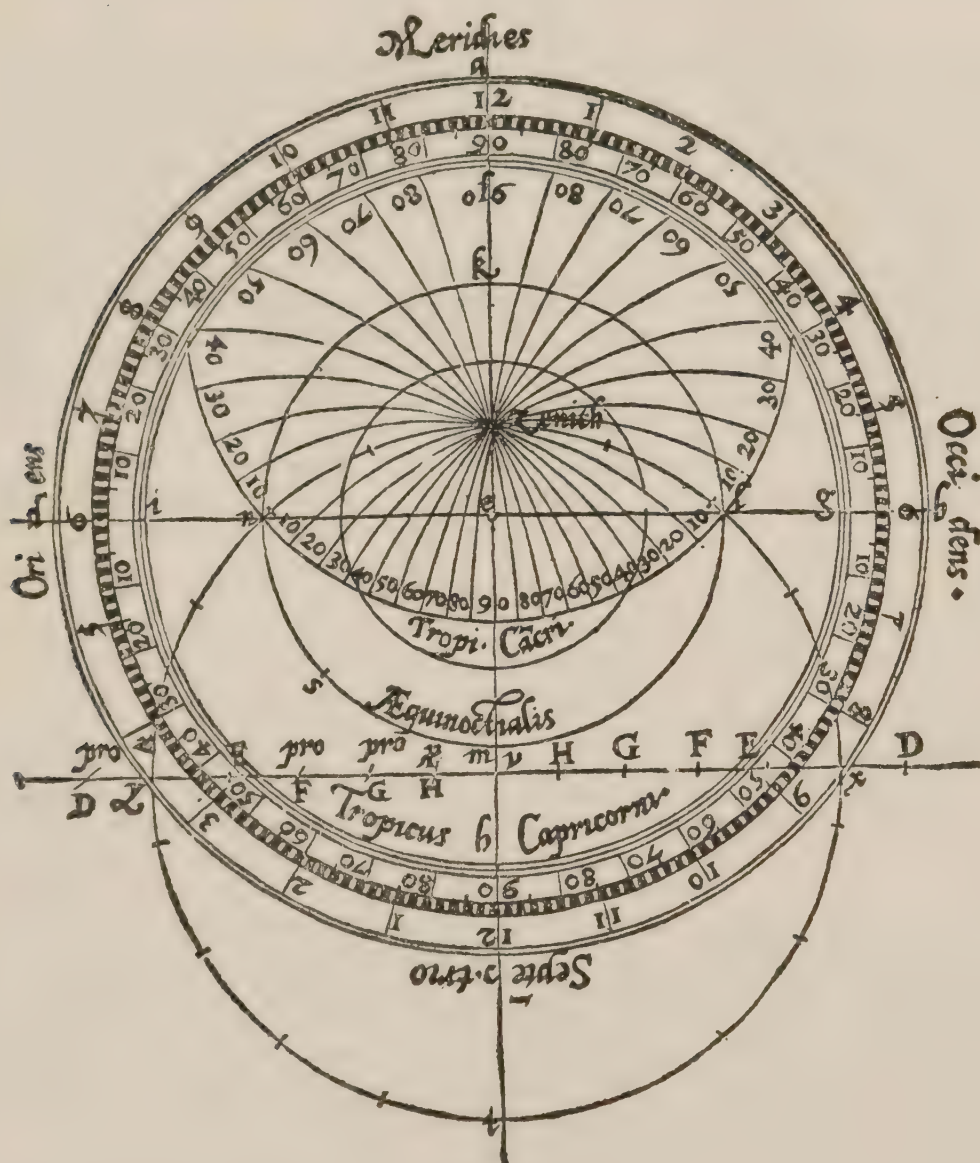
** D.N.B. xx. 794a. This book sets out Bishop Ward's theory of planetary motion, which is briefly this : That the radius vector of any planet moves round the superior focus of its orbit with a fixed angular velocity. This is nearly true for orbits of small eccentricity. Ward's theory was the last which found general acceptance, before the final acceptance of Kepler's Second Law of Uniform Description of Areas. Watt 949w.

63 WHISTON (William) and DITTON (Humphrey) A NEW METHOD FOR DISCOVERING LONGITUDE. 12mo, copper-plate diagrams, marbled wrapper. £1 1 0

For John Philips : London 1714

** FIRST EDITION. Whiston and Ditton's scheme was this : that a shell should be fired vertically, timed to explode at a height of 6,440 feet. The time between the flash and the sound would give the distance to any ship within range. As the Atlantic, according to the authors, is nowhere more than three hundred fathoms deep, fixed stations might be arranged. Needless to say the Government did not endorse this scheme, but Swift made it the occasion of some unsavoury rhymes about the authors. (*Dictionary of National Biography*, V. 1026.)

ASTROLABIUM.
ID MANIFESTUM EST
sequenti schemate.



No. 60a. STOEFFLER (JOHANN).

CARTOGRAPHY.

64 APIANUS (Petrus) COSMOGRAPHICUS LIBER. Sm. 4to, title, etc., printed in red and black, woodcut on title and others in text, several with volvelles, two pointers lacking from last page, half modern calf gilt, with the bookplate of Sidney Edward Bouverie Bouverie-Pusey.
£65 0 0

Johann Weyssenburger for Petrus Apianus: Landshut, January 1524

* * AN EXCEEDINGLY RARE ISSUE OF THE FIRST EDITION, of which the title reads *Cosmographicus liber a Petro Apiano, Mathematico, studiose collectus* (the usual reading being: *Petri Apiani* instead of *a Petro Apiano*). ONLY ONE OTHER COPY OF THIS ISSUE IS KNOWN (Royal Library, Munich). (F. v. Ortroy: *Bibliog. de P. Apian* [*Bibliographie moderne*, 1901], pp. 116-117). "Very rare edition, and the earliest of this book, which at one time was very popular." (Brunet I. 342.) "The earliest evidence of the reincarnation of a sound theoretical geography is found in the text books of Peter Apian and Sebastian Munster. Apian . . . based the whole science on mathematics and measurement." (*Encyc. Brit.* xi. 621.) "The author was the first to suggest (in the above work) the determination of the longitude by lunar distances." (*Bib. Chem. Math.* I., p. 6.) For the author's theory of longitude see pp. 30 and 31, headed: "Another method of ascertaining [longitude] from the true motion of the moon in relation to the position of the fixed stars by means of the staff called astronomical." Pp. 97-98 give a topographical description of Ireland, headed: "Hiberniae, nunc Irlandiae, insulae civitates." This book is of considerable American interest. On p. 2 is a globe with the word AMERI on an island; and the revolving diagram on p. 63 contains the word AMERICA. On p. 69 the fourth chapter begins: "The word America, as one quarter of the globe is now called, is derived from the name of its discoverer, Amerigo Vespucci; and it is not without reason, as it is surrounded by sea, that it is described as an island." (Harrisse: *Bib. Amer. Vet.*, pp. 237-238.) Nordenskiöld (*Facsimile-Atlas*, p. 92) states that the diagram on p. 63 is the earliest example of a map printed in stereographic polar projection. Speaking of the diagrams illustrating latitude and longitude (in chapters vii. and viii., D'Avezac (*Coup d'oeil sur les cartes de géographie*, pp. 53-55) says: "The disposition of the meridians and parallels, at intervals of ten degrees, is represented by a series of straight equidistant lines for the latitudes, and of semi-circles for the longitudes, the former being 36 in number (to make up 360 degrees) and the latter gradually lengthening so as to fill completely the earth's surface, presented in oval form, the greatest diameter coinciding with the equator. It was a rudimentary sketch of a new projection, which, of how-ever doubtful value on so small a scale, was the germ of the remarkable large world map of Sebastian Cabot, which appeared twenty years later, where, as in the specimens of Apianus, the scale of longitudes is purposely one third less than that of latitudes, to avoid an inordinate extension of the map east and west. But in the case of Cabot's map it was purely accidental, as, there, no such objection as to breadth could be said to exist. Owing to its convenience this mode of projection found favour all over Europe and was employed in the important works of Sebastian Munster and Abraham Ortelius." M. Van Ortroy (*Bib. d'Apian*, p. 114) remarks that the map on p. 2 is "la première carte établie d'après la projection meridienne de R. Bacon."

CARTOGRAPHY—*continued*.

65 APIANUS (Petrus) LIBRO DELA COSMOGRAPHIA, el qual trata la descripcion del mundo, y sus partes, por muy claro y lindo artificio, augmentado por el doctissimo varon Gemma Frisio . . . con otros dos libros del dicho Gemma de la materia mesma. Sm. 4to, numerous large woodcuts with volvelles, device at end, slightly wormed in blank margin, contemporary limp vellum. £32 10 0

Gregorio Bontio: Antwerp 1548

** FIRST EDITION IN SPANISH, translated from the Latin edition of 1545 (Van Ortoy: *Bib. d'Apian*, pp. 131-132). It contains the following additions: A short note at the end of chapter III, two short notes on f9b: "Another method of measuring the distance between two places" (ff. 18-19); a note and a table giving the squares of numbers between 2 and 200. Chapter V. of Part II. has been remodelled, and two dedications has disappeared. The eclipses of the moon for the years 1576-1578 are added (f.13b) and the woodcut on f.26a (which had been suppressed since the edition of 1544). The most important point about this edition is the world map at p. 35 of which M. van Ortoy (*Bio-bibliog. de Gemma Frisius*, pp. 162-163 says: "There is no doubt that this heart-shaped map is a reduction of the world map of Gemma Frisius. This is clearly indicated by the tables of contents of the Flemish editions of 1553, 1561, and 1573, which refers to it as: 'A general map of the world copied from the large map of M. Gemma Frisius.' A similar note occurs in the Flemish editions of the *Cosmographia* of 1592, 1598 and 1609." The map of Gemma Frisius (1540) is lost, and this is the only copy of it.

SEE ILLUSTRATION ON PAGES 16 AND 17.

66 FORMALEONI (Vincenzo Antonio) SAGGIO SULLA NAUTICA ANTICA DE' VENEZIANI, con una illustrazione d' alcune carte idrografiche antiche della Biblioteca di S. Marco, che dimostrano l'isole Antille prima della scoperta di Cristoforo Colombo. Sm. 4to, 3 folding plates, cobb boards, uncut. £2 5. 0

For Author: Venice 1783

** An essay on the NAVIGATORS of medieval Venice, with reference to some ancient SAILING CHARTS preserved in St. Mark's Library. Two of these charts are reproduced.

67 DIONYSIUS AFER. COSMOGRAPHIA [Translated into Latin prose by Antoni Beccaria.] Sm. 4to, a-d8e6, Roman letter (and one work in Greek), 26 lines, marginal notes, woodcut initial letters on a black ground, heading (4 lines) in red, without headlines, page numerals or catchwords, old boards, some edges uncut. £37 10 0

Franz Renner (4th press): Venice 1478

** Hain *6227. Proctor 4173. B.M.C. V., p. 195.

Second edition of the first Latin prose translation: the first edition appeared in 1477. First book issued from Renner's fourth press recorded by Proctor. The B.M.C. suggests that the marginalia were printed after the text as the inking is not always uniform. This copy is 5 mm. taller than that in the British Museum (George III.), measuring 205 mm. The type is facsimiled by the *Gesellsch. f. Typenkunde* 1913 pl. 556 and the *Woolley Photographs* 152.

The career of Franz Renner, of Heilbronn, a printer who did much fine work, falls into several well defined sections. In 1471 and 1472 he worked without partners, using a delicate Roman fount, although his output was entirely theological and scholastic. Very possibly his ventures failed to find a market

CARTOGRAPHY—*continued*.DIONYSIUS AFER—*continued*.

for this reason: at any rate, by 1473 Renner is associated with Nicolaus of Frankfurt, whose share in the business is much more likely to have been financial than practical. Still devoting itself exclusively to the same class of literature, the new firm reverted at once to the more usual Gothic letter, and for about five years seems to have done fairly well. Then at some time in 1477, Petrus de Bartua, who is otherwise unknown, takes the place of Nicolaus in the colophons, about half a dozen editions being attributable to this partnership. Finally, in the course of 1478, Renner is once more at work on his own account with different types, venturing at first on a little geography and astronomy reprinted from Maler and Ratdolt's editions with material discarded by them just previously, but soon goes back to theology and service books, at which he continues, with apparent success, until 1483. During this period he habitually puts his surname Renner into his colophons, whereas previously he had styled himself "Franciscus de Hailbrun" only. By 20 May, 1487, he was back in Heilbronn, if he may be identified with the Franz Renner mentioned in an official document of that date. (M. von Rauch: *Urkundenbuch d. Stadt Heilbronn*, vol. 2, p. 131.) It is curious to note that Renner consistently omits to specify the month and day of the completion of his books. The type, which measures 109 millimetres to the 20 lines, is apparently indistinguishable from that of Maler and Ratdolt, some of the initial letters and the Greek type are also identical. We do not know exactly under what circumstances Renner obtained possession of the Maler-Ratdolt material, and reprinted Maler-Ratdolt tracts; possibly Nicolaus of Frankfurt, who commissioned a breviary from Maler's firm a little earlier in the same year (1478), forms a connecting link. (B.M.C. *Incunabula*, Vol. V., pp. xii., 190, 191.)

The author is variously named Dionysius Afer, Alexandrinus, and Periegetes: he wrote at the end of the third century in Greek hexameters, and drew most of his geography from Erathosthenes.

68 [MAUPERTUIS (Pierre Louis Moreau de) ELEMENS DE GEOGRAPHIE. 8vo, contemporary calf, m.e., FINE COPY. £3 10 0

1740

** Biog. Univ. xxvii., 536, quotes the edition of 1742 as the first. The book is chiefly devoted to the problem of the Earth's curvature.

69 MAUPERTUIS (Pierre Louis Moreau de) EXAMEN DESINTERESSE des différens ouvrages qui ont été faits pour déterminer la figure de la terre. Seconde édition, augmentée de l'histoire du livre. Sm. 8vo, old calf. £1 10 0

Amsterdam 1741

** B.M.C. "M" lxxi, 115. Maupertuis, as is well known, devoted considerable time to determining the curvature of the earth: this book is a review of the work of his predecessors.

70 NICOLAY (Nicolas, of Arfeville) LA NAVIGATION DU ROY D'ESCOSSE. La. 8vo, woodcuts and map, modern crushed crimson morocco, gold 3-line fillet borders, gilt back, edges and inside of boards, g.e., FINE COPY. £75 0 0

For Gilles Beys: Paris 1583

** FIRST ISSUE OF THE FIRST EDITION. ON LARGE PAPER.

COLLATION: a4 e2 A4 B C2 D—K4 L2 (L2, a blank leaf) - [6] + 37 ll. A diagram inserted after l. 25; folding map at end.

The first issue has two misprints in the foliation, leaf 10 being printed

CARTOGRAPHY—*continued*.NICOLAY (NICOLAS)—*continued*.

"9." and leaf 12, "11." The present copy is an example of the first issue; there is a copy of the second issue in the British Museum (G.7317).

Several subsequent editions of this work were published: it appears in Fournier's *Hydrographie*, 1667; it is included in both editions of *Miscellanea Scotica*, 1710, and 1818, in English (B.M.), and in *The Life and Death of James V.* (B.M.).

D.N.B. x. 595; Hoefer xxxvii. 1017; Michaud xxx. 553.

James V. set out on his voyage soon after May 22, 1540. The fleet of twelve ships, well furnished with artillery, set sail from the Forth in the beginning of June, coasted the east and north of Scotland, visited numerous islands, and finally reached Dunbarton by way of Arran and Bute. The royal forces were strong enough to extort the submission of the clans, but the stay was too short for permanent effect.

Inhabitants of the North of Scotland will be interested to know that the author habitually refers to them as "savages."

71 RAEMDONCK (J. van) GERARD MERCATOR, sa vie ses oeuvres. 4to, portrait, facsimile of a memorial at Duisbourg, and a large folding genealogical table, half morocco. £5 5 0

E. Dalschaert-Praet, St. Nicholas 1869

** This life of the famous mathematician and geographer, who is chiefly known by his Atlas, contains bibliographical notes of all his works and selections from his letters, etc.

72 VOSS (Isaac) VARIARUM OBSERVATIONUM LIBER. 4to, woodcut diagrams, contemporary calf, clean copy. £1 10 0

For Robert Scott: London 1685

** FIRST EDITION. Contents include chapters on Shipbuilding, Voyage to Japan and the East Indies, Longitude, Orbit of the Moon, etc.

CHEMISTRY.

73 ACCUM (Friedrich Christian A.) A PRACTICAL TREATISE ON GAS LIGHT; exhibiting a summary description of the Apparatus and Machinery best calculated for illuminating Streets, Houses, and Manufactures with Carburetted Hydrogen, or Coal-Gas. 8vo, seven coloured plates (two folding) of apparatus, ornamental gas-brackets, etc. Contemporary polished calf, gilt. £3 15 0

G. Hayden for R. Ackerman [etc.]: London 1815

** FIRST EDITION. THE EARLIEST PRACTICAL TREATISE ON THIS SUBJECT, to the publication of which was largely due the prompt adoption of this mode of lighting in London and other large cities. D.N.B., I., p. 57. Cripps, *The Earliest Works on Gas Lighting*, p. 11.

74 ACCUM (F. C. A.). A PRACTICAL TREATISE [*Another copy.*] 8vo, original boards, with label uncut. £4 15 0 1815

CHEMISTRY—*continued*.

75 ACCUM (F.) DESCRIPTION OF THE PROCESS OF MANUFACTURING COAL GAS. 8vo, folding coloured frontispiece, and plates at end, original designed boards, uncut. FINE COPY. £2 5 0

T. Boys: London 1820

76 ACCUM (Frederick) A TREATISE ON THE ART OF BREWING, exhibiting the London practise of Brewing Porter, Brown Stout, Ale, Table Beer, and various other kinds of Malt Liquors. 8vo, coloured engraved frontispiece and engraved title with coloured diagram by W. Read. Original boards, printed label on back. £1 10 0

Longman [etc.]: London 1821

* SECOND EDITION, with the additional plate.

77 AGRIPPA (Henricus Cornelius) HENRICI CORNELII AGRIPPÆ AB NETTESHEYM a consiliis et archivis inditarii sacrae Caesareae Majestatis: De occulta philosophia libri tres. Henricus Cornelius Agrippa [Portrait] Nihil est opertum quod non reveletur, et occultum quod non sciatur. Matthaei X. Cum gratia et privilegio Caesareae Majestatis ad triennium. Folio (11 $\frac{1}{16}$ by 7 $\frac{3}{4}$ in.), 6 ll., 362 pp. (aa, a-q, 6, r_s, s-z, A.G, 6). G6 a blank leaf, numerous woodcuts and diagrams, green morocco. £5 10 0 [Johann Soter: Cologne], July 1533

* Caillet, 14. A queer mixture of science and superstition: chapters on poisons, hypnotism (de fascinatione), music, etc.

78 B[ADCOCK] (W[illiam]) A TOUCH STONE FOR GOLD AND SILVER WARES: or a manual for goldsmiths, and all other persons, whether buyers, sellers, or weavers of any manner of goldsmith's work. 12mo, frontispiece, contemporary sheep, rebaked, with the bookplate of Sir Joseph Copley, Baronet. £4 15 0 For J. Bellinger: London 1677

* FIRST EDITION.

79 BARLET (Annibal) LE VRAY ET METHODIQUE COUR DE LA PHYSIQUE RESOLUTIVE, vulgairement dite chymie, représenté par figures générales et particulières. Pour connoistre la théotechnie ergocosmique, c'est à dire, l'art de Dieu, en l'ouvrage de l'univers. Seconde édition, avec l'indice des matières de ce volume, et quelques additions. Sm. 4to, about forty full-page woodcuts, contemporary calf. £10 10 0

N. Charles: Paris 1657

* With the bookplate of Lord Fauconberg ("Bonne et belle assez"). See Debrett about 1820. Some leaves wormed. Contains some interesting information relative to the extraction of essences from roses, to laudanum, some speculations on the nature of light, etc.: THE BOOK IS LARGELY DEVOTED TO THE MANUFACTURE OF MEDICINAL PREPARATIONS. The series of woodcuts, giving an idea of the interior of a seventeenth-century laboratory, are distinctly interesting (Ferguson, *Bib. Chem.*, I., 73). "Un des ouvrages les plus intéressants et plus documentaires dans ce genre" (Caillet, *Bib. des Sciences Occultes*, I., 105).

CHEMISTRY—*continued*.

80 BOERHAAVE (Hermann) ELEMENTA C
versario labore docuit in publicis privatisque scholi
haave. Cum tabulis aeneis. 2 vol., 4to, 6 ll., 896
4 ll., 538 pp., 22 ll., contemporary vellum, with the
Six. £4 5 0

Isaacus Severinus: Ley.

** *Biographie Universelle*, Vol. IV., p. 664: "C'est, comme nous l'avons
dit, le chef d'oeuvre de Boerhaave; mais IL N'EN FAUT JUGER QUE PAR
L'EDITION DE 1732: CELLES QUI ONT PARU AUPARAVANT
N'ETAIENT PAR DE LUI, MAIS DE SES ECOLIERS."

81 BORCH (Olaf) OLAI BORRICHII, MEDICII REGII, et in
Academia Hafn. Prof. Pul., de ortu et progressu chemiae dissertatio.
Sm. 4to, errata leaf at end, leaves slightly browned, wrapper. £2 5 0
Matthias Godicchen for Peer Haubold: Copenhagen 1668

** FIRST EDITION. Ferguson, *Bib. chem.*, I., 119. One of the earliest
histories of CHEMISTRY extant.

82 BOYLE (Robert, F.R.S., 1627-1691) THE SCEPTICAL CHYMIST:
or, chymico-physical doubts and paradoxes, touching the spagyrist's
principles commonly called hypostatical, as they are wont to be proposed
and defended by the generality of ALCHEMISTS. 12mo, old calf, re-
backed. £16 0 0 J. Cadwell for J. Crooke: London 1661

** FIRST EDITION. Zeitlinger, 6426. EXCEEDINGLY RARE. Not in
Ferguson (who describes the edition of 1680), Bolton (who cites an edition,
Oxford, 1661, which, however, he does not appear to have seen, as he does not
give a collation), the British Museum, Poggendorff, or Caillet.

"In his *Sceptical chymist* he criticises the Aristotelian and alchemistic
elements, which were still accepted by many of the iatro-chemical age. He
enunciated the axiom that only what can be demonstrated to be undecomposable
constituents of bodies are to be regarded as elements. . . . With a far-seeing
glance he looked forward to the discovery of a much greater number of elements
than was at that time assumed, at the same time contending that many of the
substances then held to be elementary were not really so Boyle was
the first to state with perfect clearness that a chemical compound results from
the combination of two [or more] constituents, and that it possesses properties
totally different from either of its constituents alone, thus enabling him to draw
a sharp distinction between mixtures and chemical compounds." (E. v. Meyer.)

83 BOYLE (Robert, F.R.S., 1627-1691) EXPERIMENTS, NOTES, etc.,
about the mechanical origine or production of divers particular qualities:
among which is inserted a discourse of the imperfection of the chymists's
doctrine of qualities; together with some reflections upon the hypothesis
of alcali and acidum. (Of the mechanical origine of heat and cold; the

CHEMISTRY—*continued.*

BOYLE (ROBERT)—*continued.*

mechanical production of tastes, odours, volatility, fixtures (inertia), corrosiveness; of which mechanical causes of chymical precipitation; the mechanical production of magnetism, of electricity). 12mo, contemporary calf. £7 10 0
E. Fisher: London 1675

* Ferguson I. 120.

84 BOYLE (Robert) MEDICINA HYDROSTATICA: or hydrostaticks applied to the Materia Medica: shewing how by the weight that divers bodies, us'd in physick, have in water; one may discover whether they be genuine or adulterate. To which is subjoyned, a previous hydrostatical way of estimating ores. 12mo, frontispiece of chemical apparatus, contemporary panelled calf, FINE COPY. £4 5 0

For Samuel Smith: London 1690

* FIRST EDITION. Not in R.M.S. Cat. Catalogue of philosophical books by R. Boyle (1690), p. 13. This book was apparently intended to form the first of a series as it contains a half-title reading: "Experiments and observations relating to the Materia Medica. Tome I." No other volume of this series is known. Leaf A2 is cancelled in all copies.

Bound with:—

—— CATALOGUE: A CATALOGUE OF ALL THE PHILOSOPHICAL BOOKS AND TRACTS, written by the Honourable Robert Boyle, Esq.; together with the order of time wherein each of them hath been published respectively. To which is added, a Catalogue of the theological books, written by the same author. *Ibid.* 1690

85 BOYLE (Robert) MEDICINA HYDROSTATICA [*Another copy.*] Frontispiece, two small holes, original calf, rebacked. £2 0 0 1690

86 [BOYLE (Robert, *Author of "The Sceptical Chymist"*)] LACHRYMAE PHILOSOPHIAE: an elegy on the much to be lamented death of the late learned virtuoso, the Honourable Robert Boyle, Esq., who departed this life the 30th December, 1691. Folio, title within broad black border, unbound. £4 10 0

For Richard Baldwin: London 169½

** COLLATION: A, 2 leaves = [2] + 2 pp.

RARE. NOT IN THE BRITISH MUSEUM.

87 BOYLE (Robert) PHILOSOPHICAL WORKS. 3 vol., 4to, portrait, folding plates, old calf, worn. £1 5 0

W. Innys: London 1738

CHEMISTRY—*continued*.

88 CARDANUS (Hieronymus) DE SUBTILITATE LIBRI XXI. Folio, portrait, woodcut diagrams, with blank leaf, some leaves browned, one torn, old vellum over boards, with the bookplate of Robert W. Webb. £6 15 0

Joannes Petreius: Nuremberg 1550

* FIRST EDITION. Brunet I. 1572, De Bure 1425, Bib. Chem. Math. 688, Graesse II. 45, Caillet I. 297, Pritzel 1528, Laehr I. 41, Poggendorff I. 377, Bib. Nat. xxiii. 811.

This book is an extraordinary medley of scientific information: at page 12 we have the description of a method of raising sunken vessels, illustrated by a diagram. The author is the first to draw attention to the sifting power of undulating air, a fact rediscovered in modern times by F. G. Winkler. The book also deals with alchemy and chemistry, algebra (p. 315), biology, bees, wine, botany, astronomy, ink-manufacture, fowling, precious metals, bibliography ("Agrippae libri nondum aedite" and "Authores qui de daemoribus scripserunt"), pharmacy, silkworms, THE EARLIEST KNOWN PROPOSAL FOR THE EDUCATION OF THE BLIND ("caecus quomodo scribere doceatur," p. 331), spontaneous generation and anatomy, whales, motion of the heart, the spectrum, crystals, care of the teeth, duelling, mining, gynaecology, lightning, witches, artillery, electricity and magnetism, pearls, musical instruments, petroleum (p. 133), somnambulism, the vascular system, references to Leonardo da Vinci and Vesalius.

89 CHARLETON (Walter) PHYSIOLOGIA EPICURO-GASSENDI-CHARLETONIANA: or a fabrick of science natural upon the hypothesis of atoms, founded by Epicurus, repaired by Petrus Gassendus, augmented by Walter Charleton. Folio, old calf (rebacked). £12 10 0

Tho[mas] Newcomb for Thomas Heath: London 1654

* FIRST EDITION. D.N.B. iv., p. 118, No. 5.

90 DAGUERRE (Louis Jacques Mande, *Inventor of Photography* 1789-1851) HISTORIQUE ET DESCRIPTION DES PROCEDES DU DAGUERREO-TYPE et du diorama. 8vo, original wrapper bound in, numerous diagrams, half modern red morocco. £7 0 0

Susse Frères: Paris 1839

* FIRST EDITION. Zuchold, p. 5. A second edition at Paris, a presumably pirated reprint at Berlin, and several translations appeared in the same year. The British Museum has the first and second editions, both of which are imperfect.

91 DAVY (Humphrey, *Knight*) ELEMENTS OF AGRICULTURAL CHEMISTRY. 4to, folding plates, green calf gilt. £2 2 0

W. Bulmer: London 1813

CHEMISTRY—*continued*.

92 FERGUSON (John, *Regius Professor of Chemistry in the University of Glasgow*) BIBLIOTHECA CHEMICA: A Catalogue of the Alchemical, Chemical and Pharmaceutical Books in the Collection of the late James Young of Kelly and Durris, Esq., LL.D., F.R.S., F.R.S.E. 4to, two portraits of the owner, printed on hand-made paper, 2 vol., original brown buckram, gilt, rough edges. £16 10 0

*Printed for Private Distribution. James Maclehose & Sons:
Glasgow 1906*

** Inscription: "B. B. MacGeorge, Esq., from the Author, 7th of April, 1906."

"In endeavouring to construct the catalogue of such a library as this, which labour I undertook at Dr. Young's request, I considered who were likely to consult it and how best it could be made serviceable for the study of the history of chemistry. The persons who may possibly refer to it—besides those who actually use the library itself—are, in the first place, librarians, bibliographers, booksellers, and collectors of this branch of literature, if there be any such, and, in the second, students.

"For the convenience of the first group, the catalogue has been constructed on a more liberal and elaborate scale than would have been necessary, had the object been merely to make a list of short titles sufficient to serve as a register for the library. Instead of that the titles are reproduced in full, the particular copy is described, and any peculiarities it may possess noted, other editions are enumerated, and when practicable, an account of them, too, is added, which in many cases has been possible by inspection of the books themselves. To the different classes of bookmen these details may be convenient for reference, and for comparison with other copies. The literature is scarce, obscure and almost unknown, and, so far as my experience goes, while there are lists and enumerations of alchemical books, there is no bibliography of any part of it.

"More particularly intended for the student, who is concerned with the contents rather than the externals of the books, are the notes which contain biographical and descriptive details and discuss doubtful or disputed points of chronology, authorship, and other matters. The authors of most of these books are strangers to this country, and are but little remembered, or thought of, in their own. Some of them, however, were amongst the foremost men of their day, conspicuous by their lives, learning, discoveries and writings. It seemed desirable, therefore, in carrying out the plan I had drawn up, to give the student some notion of the position and authority of the different writers so far as lay in my power, to refer to the questions which have arisen about them and their writings, and to the criticisms and judgments which have been passed upon them." *Introduction*, pp. xvi-xvii.

93 FITZGERALD (R.) SALT - WATER SWEETNED: or a true account of the great advantages of this new invention both by sea and by land: together with a full and satisfactory answer to all apparent difficulties. Also the approbation of the Colledge of Physicians. Likewise a letter to the Honourable Robert Boyle to a friend upon the same subject. Sm. 4to, title-page dust soiled, wrapper. £6 5 0

John Harefinch: London 1684

CHEMISTRY—continued.

94 FONTANIEU (M. de) L'ART DE FAIRE LES CRISTAUX COLORIES imitans les pierres precieuses. 8vo, 28 two folding plates, marbled wrapper, uncut. £1 10 0

De L'Imprimerie de Monsieur: Paris 1778

** A monograph on the manufacture of imitation precious stones.

95 [GEDDE (Walter)] A BOOKE OF SUNDRY DRAUGHTES, principally serving for glasiars: and not impertinent for plasterers and gardeners: besides sundry other professions. Whereunto is annexed the manner how to anniel in glas: and also the true forme of the furnace and the secrets thereof. Sm. 4to, [22] + 103 + [9] pp., numerous woodcuts, four titles, surrounded by woodcut borders, contemporary limp vellum, with ties. From the Ashburnham and Tuer collections. £70 0 0

Walter Dighton: London 1615-1616

** FIRST EDITION. S.T.C. 11695. "AN ORIGINAL COPY OF THE BOOK [i.e. A COPY OF THE FIRST EDITION] IS WORTH ITS WEIGHT IN GOLD, AND IS NOW ALMOST IMPOSSIBLE TO PROCURE" (Preface to facsimile reprint 1898, a copy of which accompanies this book). Not in D.N.B., Halkett and Laing, or Soden-Smith. The last title is dated 1616, a fact which is not noticed by Lowndes (871). The author's name is also spelt "Gidde." (Allibone 666.)

SEE ILLUSTRATION ON PAGE 30.

96 GREW (Nehemiah) EXPERIMENTS IN CONSORT of the luctation arising from the affusion of several menstruums upon all sorts of bodies. To which is added, the natures, causes and power of mixture. 16mo, with the blank leaves F12, G1, G2 and G3, contemporary calf, some lower edges uncut. VERY RARE. £3 15 0

For John Martyn: London 1678

** Watt 441y. Observations of the phenomena of chemical combination and disintegration.

97 HERMANN-LACHAPPELLE (—) and GLOVER (Ch.) DES BOISSONS GAZEUSES, aux pointes de vue alimentaire, hygiénique et industrielle: guide pratique du fabricant et du consommateur. Troisième édition, entièrement refondue, considérablement augmentée et illustrée de 100 dessins. La. 8vo, numerous wood engravings, brown morocco, roxburghe, uncut. 12/6

Paul Dupont: Paris 1867

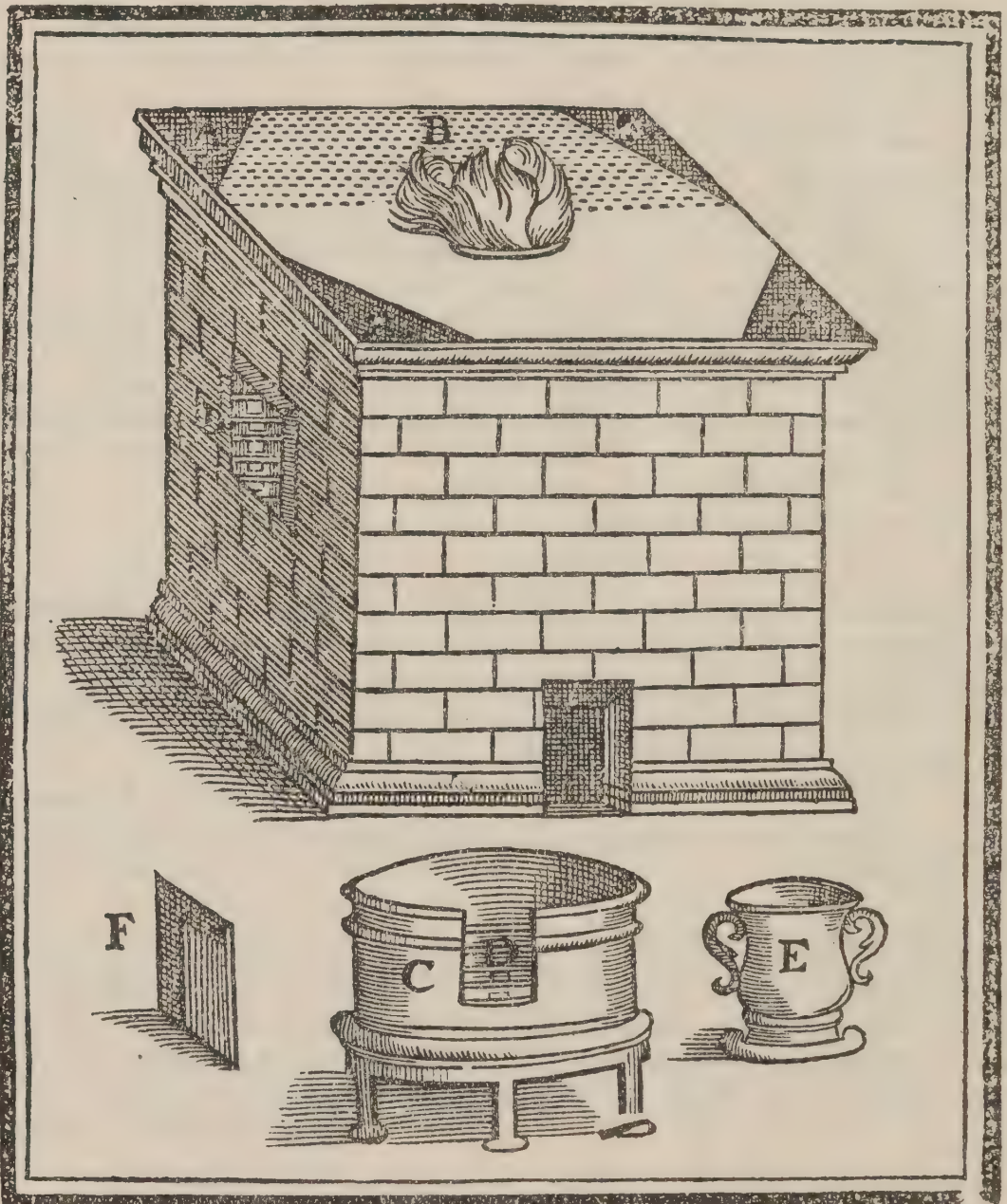
** Not in Vicaire, Bib. Gastron., who quotes two other editions.

98 HEROIC EPISTLE (An) To MR. WINSOR, the Patentee of the Hydro-Carbonic Gas Lights, and Founder of the National Light and Heat Company. 4to, wrapper. £5 0 0

For R. Spencer: London 1803

** FIRST EDITION. Watt. (Subjects, s.v. "Winson [Winsor] Mr.") Frederick Albert Winsor (1763-1830), one of the pioneers of gas-lighting, was born in Brunswick; he gave lectures on gas-lighting at the Lyceum Theatre in

THE TRVE FORME, OF THE
Furnace, for the Anneiling in Glasſe, withall
the Instruments belonging therevnto .



CHEMISTRY—*continued.*HEROIC EPISTLE (AN)—*continued.*

1804; he also obtained a patent for an "improved oven" for extracting "inflammable air," etc.; in 1807 he illuminated a part of one side of Pall Mall with gas, which was the first time such street lighting was tried in London, and raised nearly £50,000 for a projected "New Patriots' Imperial and National Light and Heat Company"; this company met with some opposition and Sir Walter Scott observed that its promoter must be a madman to expect to light London with smoke. In 1815 he went to Paris, and in 1817 he lit up the Passage des Panoramas with gas, and afterwards the Luxembourg and Odéon Arcade.

99 HOOKE (Robert) MICROGRAPHIA: or some physiological descriptions of minute bodies made by magnifying glasses. Folio, folding plates (a few slightly torn), old calf, rejoined, FINE COPY.
£9 0 0 For James Allestry: London 1667

** COLLATION: [2 ff] A a-g B-C² D-Kk⁴ Ll-Mm² = [18] ff. + 246 pp. + 5 ff. 38 plates.

FIRST EDITION Lowndes, p. 1106.

An IMPORTANT BOOK IN THE HISTORY OF CHEMISTRY, as it contains the earliest correct conception of the process of COMBUSTION. The definition of HEAT is also a remarkable approximation to the modern conception; it is described as a "property of a body arising from the motion or agitation of its parts." His theory of LIGHT is that it is "a very short vibrative motion" transverse to straight lines of propagation through a homogeneous medium. PROVENANCE: Sir Joseph Copley, Bart. (Armorial Bookplate. Franks 6836.)

100 LAVOISIER (Antoine Laurent) TRAITE ELEMENTAIRE DE CHIMIE, présenté dans un ordre nouveau et d'après les découvertes modernes; avec figures: par M. Lavoisier, de l'Académie des Sciences de la Société d'Agriculture de Paris et d'Orléans, de la Société Royale de Londres, de l'Institut de Bologne, de la Société Helvétique de Basle, de celles de Philadelphie, Harlem, Manchester, Padoue, etc. [Ornament.] 2 vol., sm. 8vo, folding plates and tables, contemporary marbled sheep.
£10 10 0 Cuchet: Paris 1789

** COLLATION: Vol. I: a b⁸ c⁶ A—V⁸ X¹, and 2 folding tables; Vol. II: 4 leaves (X 2—8)⁷ Y—Ss⁸, 13 folding plates. FIRST EDITION.

Antoine Laurent Lavoisier, an illustrious French scientist, and one of the founders of modern chemistry. In 1775 he announced that calcination and combustion are the results of a "highly respirable gas" (oxygen) and combustible matter. This book is a summary of Lavoisier's new system of chemistry.

101 LIEBAUT (Jean, of Dijon, 1535?-1596) QUATRE LIVRE DES SECRETS DE MEDECINE, et de la philosophie chimique . . . traictées bien amplement les manières de distiller eaux, huyles, et quintessences de toute sorte de matières: faire les extractions, les sels artificiels, et l'or potable. [Device: Silvestre 1169]. 12mo, woodcuts, contemporary vellum.
£8 10 0

Jean Sevestre for Jacques Du Puys: Paris 1573 [At end 1572]

** FIRST EDITION. Not in the S.G.L.S. or Ferguson: *Secrets*. Ferguson quotes the edition of 1593 as the first in the latter work.

PROVENANCE: "Cartusiae Brunensis" (Inscription).

CHEMISTRY—*continued*.

102 MACCULLOCH (J.) REMARKS ON THE ART OF MAKING WINE, with suggestions for the application of its principles to the improvement of Domestic Wines. 8vo, original boards, with label. 8/- Longman [etc.]: London 1829

103 MAIER (Michael, Graf) EXAMEN FUCORUM PSEUDOCHEMICORUM detectorum. Sm. 4to, vignette on title, slightly browned, ornamental boards. £12 10 0

Nicolas Hoffmann for Theodore de Bry: Frankfurt 1417 [1617]

** FIRST EDITION. Gardner: *Bib. Rosicruciana*, No. 336; Ferguson: *Bib. chem.* I, p. 63; Bolton: *Select Bib. of chem.*, p. 1003. An essay on what Maier is pleased to call quack-alchemy

104 MAIER (Michael) VIATORIUM, hoc est, de montibus planetarum septem seu metallorum; tractatus tam utilis, quàm perspicuus, quo, ut Indice Mercuriali in triviis, vel Ariadneo filo in Labyrintho, seu Cynosura in Oceano chymicorum errorum immense, quilibet rationalis, veritatis amans, ad illum qui in montibus sese abdidit de rubea petra alexicacum, omnibus medicis desideratum, investigandum uti poterit. Sm. 4to, emblematical copper-cut border to title-page (portrait of author at the top, a landscape at the bottom, and goddesses representing the seven metals along the sides), woodcut ornaments and initial letters, seven symbolic engravings by Jean Théodore de Bry in text, old scorings on some pages, some leaves slightly browned. Boards. £9 0 0

Hieronymus Galler for Jean Theodore de Bry: Oppenheim 1618

** FIRST EDITION. Rosenthal, *Bib. Magica*, No. 577. Ferguson, *Bib. Chem.*, Vol. II, p. 65.

105 PARACELSUS (Philippus Aureolus Theophrastus Bombastus, of Hohenheim, 1493?-1541) ARCHIDOXIA EX THEOPHRASTIA. Sampt den Büchern præparationum, de tinctura physicorum, de renovatione et restauratione vitæ, und de vita longa. Alle Teutsch . . . jetz- under zum ersten mal inn Druck geben, von D. Johanne Alberto Wimpinaco, medico et philosoph. [Device.] Sm. 4to, portraits of author and translator, contemporary calf, broad ornamental gold borders on sides, large arabesque centre pieces, and similar corner ornaments, gold ornaments on back, g.e., tooled. £7 10 0 Adam Berg: Munich 1570

** Ferguson, *Bib. Paracelsica*, V., p. 14; Graesse, V., p. 128. Not in Ferguson, Bolton, the S.G.L.C., or Caillet.

106 PARACELSUS (Philipp Aureolus Theophrastus Bombastus von Hohenheim, surnamed) SENDIVOGT (Michael) A NEW LIGHT OF ALCHEMY . . . To which is added, a treatise of sulphur . . . Also nine books of the nature of things, written by Paracelsus. . . . Also a chymical dictionary explaining hard places and words met withal in the writings of Paracelsus, and other obscure authors. . . . Translated by J[ohn] F[rench], M.D. 12mo, old calf. £4 0 0 A[ndrew] Clark for Tho[mas] Williams: London 1674

** RARE. Not in Bolton, Ferguson, *Bib. Chem.*, *Bib. Chem. Math.*, or Caillet.

CHEMISTRY—*continued.*

107 PHILALETHERS (Eirenaeus, *Cosmopolita*) [?] (George)] THREE TRACTS OF THE GREAT MEDICINE OF PHILOSOPHY Humane and Metalline Bodies. I, Intituled, Ars Metallorum philosophica (*sic*). II, Brevis Manuductio ad Rudinum Coelestem. III, Fons Chymicae Philosophiae. Translated into English for the Benefit of the Studious, by a Lover of Art and Them. Sm. 8vo, name on title-page, old manuscript notes, some leaves stained, some defective, morocco roxburghe. £3 10 0 T. Sowle: London 1694

** FIRST EDITION. D.N.B. LIV., p. 108, No. 3. VERY RARE. Not in Caillet, Hazlitt, Zeitlinger, or Ferguson. There is some doubt as to the identity of "Eirenaeus Philaethes Cosmopolita"; the British Museum General Catalogue ("P." LVII. 262) and Caillet (S.V. "Philaethes") identify him with George Starkey; but the D.N.B. (LIV. 108) says: "Starkey has been erroneously confused with the last named writer, ["Philaethes"], whose identity has not been determined, although it has been suggested that his real name was Childe."

108 PLAT (Hugh, *Kt.*) THE JEWEL HOUSE OF ART AND NATURE: containing divers rare and profitable inventions, together with sundry new experiments in the art of husbandry. With divers chymical conclusions concerning the art of distillation, and the rare practises and uses thereof. . . . Whereunto is added, A rare and excellent discourse of minerals, stones, gums and rosens, with the vertues and use thereof, by D. B., Gent. Sm. 4to, woodcuts, contemporary sheep, FINE IMPRESSED COPY. £6 5 0 Elizabeth Alsop: London 1653

** D.N.B. XV. 1294: "D.B., Gent." the editor is Arnold de Boate (or more correctly "Boot"). With the bookplate of W. Wynne. (Not in the Franks Catalogue).

109 RHODOCANACES (Constantine, of *Chios*) ALEXICACUS SPIRIT OF SALT OF THE WORLD, which vulgarly prepared is call'd spirit of salt . . . now philosophically prepared . . . in a physcally laboratory . . . where all manner of chymicall preparations are carried on. Sm. 4to, sewed. RARE. £4 0 0 R.D.: London 1664

110 STARKEY (George) PYROTECHNIA: ofte vuur-stook-kunde, vast-gesteld en opgehelderd, ofte het sekerste en veiligste middel om de konst te doen triumpheren, over de natuurlijke gebrekem sijnde een volle en opene ontdekkinge van de medicinale verborgentheden door alle konstenaars, met voordagt verborgen, en alleen ontdekkelijke toebetiedinge, en kragten van verscheide specifique medicamenten, die seer edel en agter volgende, het groote arcana zijn, met een opdragt des authours aan de Heer R. Boyle. Uut het Engels vertaalt door J. van de Velde. 12mo, 15 ll., 192 pp., frontispiece, old vellum. £2 5 0 Jacob van de Velde: Amsterdam 1687

** Not in the British Museum.

CHEMISTRY—*continued*.

III STUBBE (Henry, *M.D.*) LEGENDS NO HISTORIES: or a specimen of some animadversions upon the history of the Royal Society. Wherein . . . sundry mistakes about the making of saltpetre and gunpowder are detected and rectified: whereunto are added two discourses, one of Pietro Sardi, and another of Nicholas Tartaglia, relating to that subject. Translated out of Italian. With a brief account of those passages of the author's life, which the *virtuosi* intended most to censure, and expatiate upon: . . . Together with the *Plus ultra* of Mr. Joseph Glanvill, reduced to a non-plus, etc. Sm. 4to, old calf. £1 18 0
[Without printer]: London 1670

* Watt, 886 p. Not in Hazlitt or Lowndes.

II2 VALENTINUS (Basilius) THE LAST WILL AND TESTAMENT OF BASIL VALENTINE, Monke of the order of St. Bennet, which, being alone, he hid under a table of marble, behind the high-altar of the cathedral church, in the imperial city of Erford: leaving it there to be found by him whom God's providence should make worthy of it. To which is added two treatises: The first declaring his manual operations: The second shewing things natural and supernatural. [Translated by J.W.] Never before published in English. 12mo, 12 ll., 534 pp., contemporary calf, with the book-plate of Sir Joseph Copley, Bart. £12 10 0
S. G. and B. G. for Edward Brewster: London 1671

** Valentinus was the discoverer of antimony.

II3 VALENTINUS (Basilius, *discoverer of antimony*) KERCKRING (Theodor, *M.D., friend of Spinoza*) COMMENTARIUS IN CURRUM TRIUMPHALEM ANTIMONII Basilii Valentini, a se Latinitate donatum. 16mo, engraved title by ROMEYN DE HOOGE, manuscript notes and scoring, old sheep. £4 0 0 Hendrick Wetstein: Amsterdam 1682

** Ferguson I, 78; Caillet II, 354; not in Bolton.

II4 WALCOT (H.) SEA-WATER MADE FRESH AND WHOLESOME [by distillation for use at sea]. Objections against the use thereof removed, and the advantages prov'd to be very great. By H. Walcot, Gent. [Quotation]. Sm. 4to, 8 + 28 pp., some edges uncut, clean copy, wrapper. £1 0 0 For R[ichard] Parker: London 1702

** An advertising pamphlet.

II5 WILLIAMS (C. W.) OBSERVATIONS ON THE MODES OF APPLYING the chemical principles on which combustion is effected to furnaces of different kinds. 8vo, wrapper. 6/- Liverpool [c. 1830]

II6 ZACAIRE (D[enis]) OPUSCULE TRES EXCELLENT DE LA VRAIE PHILOSOPHIE NATURELLE DES METAULX, traict ant de l'augmentation et perfection d' iceux. Avec advertissement d'éviter les folles despences qui se font ordinairement par faute de vraye science. Avec le traicté de véné-

CHEMISTRY—*continued*.ZACCAIRE (D[ENIS])—*continued*.

able Docteur Allemand Messire Bernard Conte de la Marche Trévisane sur le même subject. 16mo. A few pages slightly scored, one blank leaf at end, slightly wormed, old crimson morocco, gold line borders on sides, gilt ornaments on back, gilt edges and inside of boards, g.e., with the book-plate of Thomas South. £10 0 0

Benoît Rigaud: Lyons 1574

** This book is so rare that Baudrier (II. p. 312), although he records this book, was unable to give a description. Pp. 163-167: "La façon d'user nostre divine oeuvre sur les perles et sur les rubiz; pp. 167-169: "La façon d'user nostre divine oeuvre aux corps humains, pour les guérer des maladies et les conserver en santé."

COSMOLOGY.

117 LAPLACE (P[ierre] S[imon], *Marquis*) THE SYSTEM OF THE WORLD. . . . Translated from the French by J[ohn] Pond, F.R.S. 2 vol., 8vo, 2 leaves of advertisements, a few pencil marks and notes, original slate grey boards (neatly rebacked), uncut, some leaves unopened. £3 15 0

W. Flint for Richard Phillips: London 1809

** FIRST EDITION. D.N.B. XVI. 78; Watt 5872; Allibone p. 1620, No. 1; Lowndes 1311; Roy Astron. Soc. 202; Bib. Chem. Math. 10503.

"A kind of translation into popular language, without analytical formulas, of his greater work, *La mécanique céleste*. . . . He shares the honour of proving the stability of the planetary system with Lagrange" (Thomas).

Thomas: *Univ. Dict. Biog.* p. 1372.

118 LAPLACE (P[ierre] S[imon]) EXPOSITION DU SYSTEME DU MONDE. 4to, old calf. £2 0 0

Crapelet: Paris, An VII [1800]

** Thomas. Biog. Dict. p. 1372. A popular version, without mathematical formulae, of his *Mécanique céleste*.

119 NEWTON (Isaac, *Knight*) VARENIUS (Bernhard) GEOGRAPHIA GENERALIS. . . . Summa cura quam plurimis in locis emendata, et xxxiii schematibus novis, aere incisus, una cum tabb. aliquot quae desiderabantur aucta et illustrata ab Isaaco Newtono. . . . 12mo, 5 folding plates, contemporary calf. £3 0 0

John Hayes for Henry Dickinson: Cambridge 1672

** FIRST EDITION of one of Newton's earliest publications. Watt 923g, Lowndes 2755, Gray 360.

[MEDICINE] Cap. XVII. "De aquis mineralibus. . . ."

This copy contains the following inscription on the title: "Ex collectione libr. Vincentii Equitis de Nowina Smagtowsky, exulis Poloni, Ao. Exilii 32, et Sperandae Salutis 1861. Amico meo Philip [p]o de K."

COSMOLOGY—*continued*.

120 POTTER (Charles) ΠΥΘΑΓΟΡΑΣ ΜΕΤΕΜΨΥΧΟΣ, sive theses quadragesimales in Scholis Oxonii publicis Mart. V. et XXVI. pro forma discussae, A.D., MDCXLIX/L, in quibus ad mentem imprimis Pythagoraeorum asseritur quod, Coeli sint fluide; terra moveatur; terra centrum universi non sit; luna sit habitabilis; radius luminosus sit corporeus; sol sit flamma. 16mo, 3 ll., 137 pp., 8 ll., polished calf. £2 0 0

H. H. for R. Davis: Oxford 1651

** FIRST EDITION.

121 VINCENT OF BEAUVAIS (*Dominican, d. about 1260*) SPECULUM NATURALE. 2 vol., fol., Gothic letter, without signatures, catchwords or page-numerals, 2 columns, with the blank leaves, 68 and 69 lines, 2 illuminated initials with marginal decorations, initial spaces filled in in red and blue, wormed, old calf, repaired. £135 0 0

[Printer of the 1481 *Legenda Aurea*: Strassburg 1481?]

** Copinger 6257; Proctor 2056; Hase: *Die Koberger*, p. 462; British Museum Catalogue of Incunabula III., p. 860.

No copy in the Bodleian Library according to Proctor; not in Hain or Winship: *Census of incunabula in America*.

This edition has for some time been attributed to the Press of Anton Koberger, the famous Nuremberg printer and publisher.

Proctor placed it under that heading and Hase includes it (with a query mark) in his list Koberger's books. In 1912 Mr. A. W. Pollard stated that the book had been transferred to Basle (B.M.C. II. p. X.), but in 1913, when the third volume of the Museum Catalogue was published we find it definitely assigned to "the Printer of the *Legenda Aurea*," and a manuscript correction in the General Catalogue gives the date as 1481? Until the addition of this book was made the Museum only had six books from this Press (Proctor 412-417) of which two give the place of printing—Strassburg, and five dates ranging from 1481 to 1483.

Vincent of Beauvais was tutor to the sons of Louis IX. In the *Speculum Naturale* is contained all that was known about medicine and science in the Middle Ages, including cosmology, astronomy, geography, meteorology, geology, mineralogy, botany, zoology, anatomy, and physiology. The author is at times curiously modern in his ideas and seems to have had some notion of comparative anatomy and physiology. The books especially devoted to medicine are XII., XIII. and XIV. Rieunier, in his *Quelques mots sur la médecine au moyen-âge, d'après le Speculum majus de Vincent de Beauvais*, at the conclusion of a careful analysis, has summed up as follows:—

(1). The *Speculum naturale* (or *majus*) is important for the history of medieval medicine.

(2). Vincent of Beauvais's anatomical definitions and physiological theories are frequently inaccurate.

(3). Although his therapeutics is often fantastic, he occasionally describes treatments of real value.

(4). External symptoms and phenomena are usually observed correctly.

(5). It is noteworthy that there is a passage in this book which proves that the skin disease known as "the itch" (*Gale*) was among those complaints included under the term *scabies*.

(6). There is no indication of a knowledge of syphilis in this work.

A minute analysis of the book will be found in Bourgeat: *Etudes sur Vincent de Beauvais*. pp. 153-173.

ELECTRICITY.

122 DESCARTES (René) EPISTOLAE. Partim ab auctore Latino sermone conscriptae, partim ex Gallico translatae. Sm. 4to, numerous folding plates, contemporary calf. £3 5 0

For John Dunmore and Octavian Pulleyn: London 1668

** Lowndes 632. CONTENTS. MEDICINE: on a certain disease: light: gravitation: UNIVERSAL LANGUAGE: Rainbow: Henry More, the Platonist: CIRCULATION OF THE BLOOD: gangrene: velocity of light: planetary motion: reflecting telescopes: VARIATION OF MAGNETIC DECLINATION: tides: the velocity of projectiles: refraction: On the valves of the heart: the transformation of chemical elements: etc., etc.

PROVENANCE: Mary Hamilton Nisbet Ferguson (Bookplate: Franks 10387).

123 GILBERT (William) GUILIELMI GILBERTI COLCESTRENSIS MEDICI LONDINENSIS, DE MAGNETE, magneticisque corporibus, et de magno magneti tellure: physiologia nova, plurimis et argumentis et experimentis demonstrata. [Device, See Bib. Soc. Trans. IV. 104. Facsimile of title-page; see plate in Zeitlinger at I. 78.] Folio (11 $\frac{7}{16}$ by 7 $\frac{9}{16}$ in.), the Author's Arms on the reverse of the title-page, ornamental woodcut initial letters, woodcut printer's ornaments, woodcut diagrams, 8 ll., 240 pp., (* 8 A-V6), one folding plate. FINE, UNPRESSED AND EXTRAORDINARILY TALL COPY. New polished calf, old red morocco label on back.

£60 0 0

Peter Short: London 1600

** FIRST EDITION. D.N.B., vi, 1217: "THE FIRST GREAT PHYSICAL BOOK PUBLISHED IN ENGLAND, and [which] has fulfilled for its author Dryden's prophecy:—

'Gilbert shall live till loadstones cease to draw.'

His merit was immediately recognised both in England and on the Continent, where he won eulogy from Galileo. Bacon mentions Gilbert with respect in the *Novum Organum* (ed. Leyden, 1650, pp. 263-265, and elsewhere). The author has worked at his subject many years, revising and experimenting. He begins by a summary of existing knowledge about the magnet exactly resembling the commencement of a modern scientific essay. The next part is characteristic of his own time, and is an account of the names of the loadstone, and their etymology. The remainder is an investigation of the properties of the magnet, illustrated by diagrams and relating numerous experiments. The attraction of the magnet, its direction in relation to the poles of the earth, its variation and declination, are treated in separate divisions. He does not neglect to point out the practical bearing of these points in navigation, and how the declination may be used in discovering the latitude at sea. His general conclusion is that the phenomena of magnetism are explained by regarding the earth as one vast spherical magnet."

Camb. Hist. of Eng. Lit., IV, 277-8: "His work contains a series of carefully graduated experiments, each one of which is devised so as to answer a particular question, while the simpler and more obvious facts are set forth first, and their investigation led by orderly stages to that of the more complex and subtle. . . . Gilbert has been called 'the first real physicist and THE FIRST TRUSTWORTHY METHODOICAL EXPERIMENTER [K. Lasswitz, *Gesch. d. Atomistik*, I, p. 315] . . . In his discussion of the attraction of bodies there is A SUGGESTION OF THE DOCTRINE OF UNIVERSAL GRAVITATION. He had also reached A CORRECT VIEW OF THE ATMOSPHERE AS EXTENDING ONLY A FEW MILES FROM THE SURFACE

ELECTRICITY—*continued.*GILBERT (WILLIAM)—*continued.*

OF THE EARTH, with nothing but empty space beyond." *Encyc. Brit.*, xii, 9, and xvii, 352 : "He also carried out some new experiments on the effects of heat, and of screening by magnetic substances, and investigated the influence of shape upon the magnetization of iron. But the bulk of his work consisted in imparting scientific definiteness to what was already vaguely known, and in demolishing the errors of his predecessors. NO MATERIAL ADVANCE UPON THE KNOWLEDGE RECORDED IN GILBERT'S BOOK WAS MADE UNTIL THE ESTABLISHMENT BY COULOMB IN 1785 OF THE LAW OF MAGNETIC ACTION."

Zeitlinger, 1526-7, and 8399-40 : Mr. Zeitlinger describes a copy measuring $11\frac{3}{16}$ -in. as "unusually tall"—it will be seen above that the present copy measures $11\frac{1}{16}$ -in.—"Prof. Silvanus Thompson, F.R.S., writing on the work in the *Electrician* of March 24, 1905, says : 'THIS BOOK IS MUCH RARER THAN THE FIRST FOLIO SHAKESPEARE, for while of that work there are no fewer than 156 copies known to exist, there are only 68 copies of the first folio Gilbert known, and ONLY TWO HAVE BEEN SOLD IN THE BOOK AUCTIONS DURING THE LAST TWENTY YEARS.' . . . [He] conjectured that TERRESTRIAL MAGNETISM AND ELECTRICITY WERE TWO ALLIED EMANATIONS OF A SINGLE FORCE—a view which was only demonstrated with scientific strictness two centuries afterwards by Oersted and Faraday. . . . He describes how to measure the excited electricity [produced by rubbing amber, etc.] by means of an iron needle moving freely on a point [the ELECTROSCOPE]."

Bib. Soc. Trans., IV, 103-128 (Prof. Silvanus P. Thompson) : "The work prized by all electricians and lovers of science, as not only embodying the first theory of the earth's magnetism, but as being THE VERY FOUNDATION STONE OF THE SCIENCE OF ELECTRICITY."

Herbert, 1210 : "On the back [of the title page] are the author's arms." Hallam, *Lit. of Europe*, II, p. 287, para. 22 : "Gilbert was also one of our earliest Copernicans, at least as to the rotation of the earth, and, with his usual sagacity, inferred, before the invention of the telescope, that there must be a multitude of fixed stars beyond the reach of our vision. . . . Gilbert's argument for the diurnal motion could be extended to the annual : 'Non probabilis modo sed manifesta videtur terrae diurna circumvolutio, cum natura semper agit per pauciora magis quam plura, atque rationi magis consentaneum videtur unum exiguum corpus telluris diurnam volutionem efficere quam mundum totum circumferri.' "

124 KIRCHER (Althanasius) *MAGNES: sive, De Arte Magnetica, quo praeterquam quod Universa Magnetis Natura, ejusque in omnibus Artibus et Scientiis Usus nova methodo explicetur, è viribus quoque et prodigiosis effectibus magneticarum, aliarumque abditarum naturae motionum in Elementis, Lapidibus, Plantis et Animalibus elucescentium, multa hucusque incognita Naturae Arcana per physica, medica, chymica, et mathematica omnis Generis Experimenta recluduntur.* Sm. 4to, engraved frontispiece, consisting of an heraldic device and a view of Cologne (?), numerous interesting woodcuts and plates, some folding, old citron morocco, gilt 3-fillet borders on sides, full gilt back, gilt interior borders, FINE COPY, *rare.* £4 10 0 *Jodocus Kalcoven: Cologne 1643*

** [28] + 797 + [37 pp.] = 431 leaves. "Ce traité du magnétisme contient beaucoup de choses frivoles. On trouve, livre iii, la figure de la tarentule, avec les airs [i.e. charms with words and musical notation] qu'on croyait propres à guérir la morsure de cet insecte." *Biographie Universelle* xxii, 441.

ELECTRICITY—*continued*.

125 LAPOSTOLLE (—) TRAITE DES PARAFONDRES et des Paragrêles en cordes de paille, précédé d'une météorologie électrique, présentée sous un nouveau jour, et terminée par l'analyse de la bouteille de Leyde. 8vo, LITHOGRAPHIC folding plate showing a town protected by lightning-conductors. In a contemporary binding of red morocco, foreign Royal Arms on sides (spread eagle bearing a shield with initials "G.F." within gold border on sides, gilt back, g.e. £4 0 0

Caron-Vitet: Amiens 1820

** A rare and early work on lightning-conductors, etc.

126 LORIMER (John, M.D.) A CONCISE ESSAY ON MAGNETISM: with an account of the declination and inclination of the magnetic needle; and an attempt to ascertain the cause of the variation thereof. By John Lorimer, M.D., and Fellow of the Royal College of Physicians of Edinburgh. [*Quotation.*] 4to, portrait of J[ame]s Basire after J[ohn] Donaldson, folding plates, original boards, uncut and unopened, FINE COPY. £4 10 0 *For the Author and W. Faden: London 1795*

** COLLATION: a, b, B-E4 F2 (F2 blank)= XVI + 34 + [2] pp., 7 plates.

Watt: *Bibliotheca Britannica*, col. 616t.

PROVENANCE: "FROM THE AUTHOR" (Inscription on flyleaf)

127 MAWAN (Jean Jacques Dortous de) TRAITE PHYSIQUE ET HISTORIQUE de l'aurore boréale. 12mo, 17 plates (some folding), old calf. 10/6 *Pierre Mortier: Amsterdam 1735*

** Mairan attributes this phenomenon to the solar atmosphere.

128 NOLLET (Jean Antoine) ESSAI SUR L'ELECTRICITE DES CORPS. 12mo, five plates, some folding, some leaves wormed, original marbled wrappers, uncut. £1 0 0 *Guerin frères: Paris 1746*

** FIRST EDITION. Jöcher-Adelung, v. 788. Not in Brunet; the earliest edition quoted by the *Nouvelle Biographie Générale* is that of 1747, and the earliest by the *Biographie Universelle*, 1750. Jöches gives 218 pp.: this copy has 228.

129 PEREGRINUS OF MARICOURT (Peter) THE EPISTLE OF PETER PEREGRINUS of Maricourt on the Magnet written in 1269 to Sygerus of Foncancourt, Soldier, done into Englishe by Professor Silvanus P. Thompson from the printed Latin versions of Gaffer, Bartelli and Hellman, and amended by reference to the manuscript copy in his [Prof. Thompson's] possession, dated 1391. Sm. 4to, one of the 240 numbered copies printed in the Chiswick Press special Caxton type on hand-made paper, facsimile of diagrams, rubricated throughout by T. Thompson, the initials by hand after 15th century models, original half holland. £2 0 0 (*Privately Printed*) at the Chiswick Press 1902

** The first English version of this remarkable treatise, "finished in

ELECTRICITY—*continued.*PEREGRINUS OF MARICOURT (PETER)—*continued.*

camp at the siege of Lucerna in the year of our Lord 1269." The translator is the most eminent of English authorities on the subject, and for once we are favoured with an ancient scientific tract, ably edited, and presented in just the form and types the Founder of the English press might have used had he printed it."

With the Arms of Cardinal Ursino.

130 STRADA (Famianus) PROLVSIONES ACADEMICAE. 4to (9 by 6½ in.), engraved title, including full-length figures of Oratory, History, and Poetry by H. G., woodcut initials, contemporary red morocco, elaborate corners, gold-tooled on sides, containing figures springing from branches and roses, in centre the ARMS OF CARDINAL ALEXANDRA URSINO, impressed in gold, on the back roses in gold, bookplate of the Rt. Hon. the Lord Lynne, 1734. £20 0 0 *Romæ* 1617

** THE EARLIEST BOOK IN THE LITERATURE OF THE ELECTRIC TELEGRAPH. At p. 351 we have a passage of extraordinary interest to the student of scientific history: it occurs in the course of a lecture on poetic style and on the imitation of the ancient poets; the author gives several examples (presumably of his own composition), one of which is an imitation of Lucretius, and the subject magnetism. After commenting on the peculiar properties of the load-stone, and its power of magnetising needles, so that they always face north and south, and on the influence of one magnetised needle on another, he continues (translation):—

"So that if one [needle] be moved in Rome, the other, although far distant, is constrained by the secret forces of nature to respond. Therefore it follows, if you want to communicate with a distant friend, to whom it is impossible to send a letter; take a large disc, and mark round the edge the letters of the alphabet; in the middle place a magnetised needle, in such a way that it is possible to turn it to any letter required. Then make another like it, also furnished with an iron pointer which has been magnetised, and let your friend take it away with him, having first arranged the time for the experiment. Having done this, all you have to do in order to communicate with your friend in secrecy, though he be many miles away, is to point the needle to the letters which make up the words of your message; and in a miraculous way your friend's pointer will of itself revolve and point to the identical letters." The above is a compressed paraphrase (avoiding poetical circumlocutions).

It may be permitted to formulate a theory as to how this preposterous idea came to be published. We will assume that Strada had a scientific friend, who, having read Gilbert, and as the result of some elementary experiments, conceived in a dim way the electric telegraph. Also that he communicated these ideas to our author, who thought them suitable for an imitation of Lucretius: but not being a scientist was untroubled by a love of accuracy or probability. (See Timbs' *Wonderful Inventions*, p. 341.)

131 STRADA (Famianus) PROLVSIONES ACADEMICAE: seu orationes variae ad facultatem oratoriam, historicam, poeticam spectantes. Editio tertia. 12mo, 481 pp., 15 pp., contemporary calf, FINE COPY, with the bookplate of Algernon Capel, Earl of Essex, dated 1701. £14 0 0

Johann Kinok: Cologne 1625

ENGINEERING.

132 AERONAUTICA: or, The History of Aviation and Aero-station Told in Contemporary Autograph Letters, Books, Broad-sides, Drawings, Engravings, Manuscripts, Newspapers, Paintings, Posters, Press Notices, etc. Dating from the year 1557 to 1880. 4to, five folding plates, and other illustrations, orange morocco, roxburghe, t. e. g. 18/.
Privately Printed. N.D

133 BATE (John) THE MYSTERIES OF NATURE AND ART: contained in foure severall treatises, the first of water workes, the second of fyer workes, the third of drawing, colouring, painting and engraving, the fourth of divers experiments, as wel serviceable as delightful: partly collected and partly of the author's peculiar practice and invention; by J.B. 4to (7 $\frac{7}{16}$ by 5 $\frac{5}{8}$ in.), engraved title-page in compartments, repaired, numerous diagrams, calf rebacked. £36 0 0

For Ralph Mab, John Jackson and Francis Church: London 1634

** FIRST EDITION. At p. 57 is a second title-page: THE SECOND BOOKE TEACHING MOST PLAINLY, and withal most exactly, the composing of all manner of fireworks for triumph and recreation. By I. B. [woodcut] *Thomas Harper for Ralph Mab: London, 1634.* At p. 101 is a third title-page: THE THIRD BOOKE OF DRAWING, limming, colouring, painting and graving. By I. B. [woodcut] *Thomas Harper for Ralph Mab: London. 1634.* At page 143 is a fourth title-page: THE BOOKE OF EXTRAVAGANTS: wherein amongst others, is principally contrived divers excellent and approved medicines for severall maladies. By I. B. [ornament] *Thomas Harper for Ralph Mab: London. 1634.* NOT IN SAYLE, *Catalogue of Eng. Bks. before 1641 in Camb. Univ. Lib.,* or *Surg. Gen. Lib. Catalogue.* Mr. Zeitlinger describes a copy which lacks the title-page to the third part. He says of the book: "THE FIRST EDITION OF THIS CURIOUS WORK IS EXCESSIVELY RARE, no copy having happened for sale for the last twenty years. Some of the experiments described and depicted are very curious, including instructions how to make weather-glasses, water-clocks, etc., experiments in drawing water by the crane and by engines, of forcing water by ayre compressed and by engins, of producing sounds by ayre and water by evaporation of water by fire and by engins, of motions by evaporating water and by rarefying air, etc., etc., etc. BEARING IN MIND THE EARLY DATE OF PUBLICATION, ITS DESCRIPTIONS OF ENGINES DRIVEN BY STEAM ARE OF CONSIDERABLE INTEREST. Page 155 describes how to make a FREEZING MIXTURE, WHICH IS OF SPECIAL INTEREST. ROBERT BOYLE HAVING BEEN CREDITED WITH MAKING THE FIRST EXPERIMENTS IN 1667—THIRTY-THREE YEARS AFTER THE PUBLICATION OF THE ABOVE WORK." (Bib. Chem. Math., 289.) Bate's recipe runs as follows: "To make ice that will melt in fire, but not dissolve in water. Take strong water made with saltpeter, allum, and oyle of tartar, of each, one pound. Infuse them together, then put into them a little *aqua ardens*, and it will presently coagulate them, and turne them into ice." Mr. Levis says of the book: "Eight pages deal with the subject of 'GRAVING'; the illustrations in this section shew a hand holding a burin, engraving a flower on a plate, a hand engraving a ring held in a vice, and at the bottom of each is shewn the engraving tool. It explains how to prepare the plate, and how to make and use the graver, also how to etch, and how to prepare the plate for etching, and how to engrave on a flint stone. As a practical book on engraving it is very primitive. IT IS VERY RARE IN PERFECT CONDITION; THE TITLE-PAGE IS NEARLY ALWAYS MISSING. The "FIRE-WORKS" section contains the following headings: A device to try the

ENGINEERING—*continued.*BATE (JOHN)—*continued.*

strength of divers sorts of gun-powder : compositions for rockets of all sizes : compositions for starres : compositions for receipts of fireworks, that operate upon the earth : a receipt for rockets that burn upon the water : a receipt of a composition that will burn under water : a water called *aqua ardens* : how to make serpents : how to make rayning fire : how to make starres : how to make petards : how to make compounded rockets : how to make fiends, or fearefull apparitions : how to make fire boxes : how to make swevels : how to make gironells or fire wheels : how to make flying dragons : how to make firedrakes : how to make balloones, also the mortar peece to discharge them : how to make trunks : how to make tumbling balls : how to make saucissons : how to make the flying saucisson to be delivered out of the mortar peece : how to make a fire sword : the description and making of three sorts of fire-lances : the description and making of two sorts of fire clubs : how to make a fire target : how to make rockets for the water : how to make a rocket that shall burn a good while in the water, and then mount up into the ayre : the description and making of two sorts of fire bals for the water : how to make a dolphin.

134 BELIDOR (Bernard Forest) LA SCIENCE DES INGENIEURS dans la conduite des travaux de fortification et d'architecture civile. 4to, frontispiece and folding plans, old calf. £2 0 0
C. A. Jombert : Paris 1739

135 BESSON (Jacques) THEATRE DES INSTRUMENS MATHEMATIQUES et mécaniques de Jacques Besson, Dauphinois, docte mathématicien. Avec l'interprétation des figures d'iceluy, par François Béroald. Folio, title in woodcut border, slightly stained, boards. £17 0 0
Barthelémy Vincent : Lyons 1579

** Brunet I. 829 : " Cette édition, augmentée d'une interprétation, reproduit les planches originales ci-dessus [of the undated Latin edition], à l'exception des nos. 17, 35, 39, et 41, qui ont été remplacés par des copies gravées par Reneé Boyvin." Plate 52 represents a primitive fire engine; this engraving was reproduced in woodcut by an English artist for Lucar's *Lucarsolace*, London, 1590 (see our Catalogue No. 922, No. 75, and pp. 16 and 17). Several plates are devoted to primitive lathes.

136 BOECKLER (Georgius Andreas) ARCHITECTURA CURIOSA NOVA, exponens Fundamenta hydrogogica, indolemque aquae, aëris interventu in altum levandae; varios Aquarum ac salientium Fontium Lusus per varia Spectatu jucunda Epistomiorum seu Siphonum Genera; magnum amoenissimorum Fontium, Machinarumque aquaeductoariarum Sumtu magno extructarum, ac per Italiam . . . visendarum, numerum. Specus artificiales sumptuosissimas . . . cum Auctario Figurarum elegantissimarum, ad Hortorum Topiaria vario Ductu dividenda, nec non conclavium Laquearibus ac Pavimentis segmentandis, itemque Labyrinthis construendis, adhibendarum . . . in Latinam Linguam translata a Johanne Christophoro Sturmio. Folio, frontispiece and two HUNDRED AND TWENTY-EIGHT PLATES. Vellum. £6 0 0
Paulus Fuersten : Nuremberg [1664]

** " Ouvrage . . . contenant des figures de jets-d'eau, cascades, bassins, fontaines, grottes," etc. Brunet, i, 1024.

ENGINEERING—*continued*.

137 BOECKLER (Georgius Andreas) ARCHITECTURA CURIOSA NOVA.
[*Another copy.*] Calf. £6 0 0
Paulus Fuersten: Nuremberg [1664]

138 BOUGUER (Pierre) TRAITE DU NAVIRE, de sa construction, et
ses mouvemens. 4to, device (not in Laurent-Vibert), vignettes by Chedel,
folding diagrams, a few manuscript notes in a contemporary hand, book-
seller's label at foot of title, some leaves slightly stained, contemporary
French marbled calf, r.e. £6 0 0
L. Cellot for Ch. Ant. Jombert: Paris 1746

* FIRST EDITION. Brunet 8466. Zeitlinger: *Bib. Chem. Math.* No.
497: "THIS IMPORTANT WORK IS GENERALLY CONSIDERED TO
HAVE LAID THE FOUNDATION OF THE THEORY OF NAVAL ARCHI-
TECTURE." Poggendorff: *Lex. d. exacten Wissensch.* I. 254. Graesse I
p. 509. Ebert No. 2854. *Encyc. Brit.* IV. p. 316. *Nouv. Biog. Gen.* VI. col.
910. *Biog. Univ.* V. p. 208, No. 5. Larousse: *Grande Dict* II. p. 2077.
Guérard. I. p. 440. *Brit. Mus. Cat.* "B" LXI. p. 207. *Bib. Nat. Cat.* XVII.
col. 224. Not in Watt.

139 BOYLE (Robert, F.R.S., 1627-1691) NEW EXPERIMENTS PHYSICO-
MECHANICAL, touching the spring of the air, and its effects, made for the
most part in a new pneumatical (*sic*) engine. [A defence of the
doctrine touching the spring and weight of the air . . . against the
objections of FRANCISCUS LINUS. Wherewith the objector's funicular
hypothesis is also examined. An examen of Mr. T. Hobbs, his *Dialogus
physicus de natura aeris* . . . with an appendix touching Mr. Hobbs'
doctrine of fluidity and firmness. A continuation of new experiments
physico-mechanical touching the spring and weight of air . . .
whereunto is annexed a short discourse of the atmospheres of consistent
bodies. . . . Divers experiments made both in compressed and also
in factitious air, about fire, animals, etc., together with a description of
the engines wherein they were made.] Sm. 4to, plates, old calf, re-
backed. £6 0 0 [Various imprints] 1660-1682

140 DASSIÉ (—) L'ARCHITECTURE NAVALE, contenant la manière
de construire les navires, galères et chaloupes, et la definition de plusieurs
autres espèces de vaisseaux. Avec les tables de longitudes, latitudes et
marées, cours et distances des principaux ports des quatres parties du
monde [*etc.*] 4to, folding plates, old calf. £3 10 0
J. de La Caille: Paris 1677

141 FAUJAS DE SAINT-FOND (Barthélemy) DESCRIPTION DES
EXPERIENCES de la machine aérostatique de M. M. Montgolfier. 8vo,
frontispiece and nine plates, new boards, defective, uncut. £5 0 0
Cuchet: Paris 1783

** One of the earliest important books on ballooning and the construction of
balloons.

ENGINEERING—*continued*.

142 FAUJAS DE S. FOND (B.) DESCRIPTION DES EXPERIENCES.
[Another copy]. Edges cut, old boards. £3 10 0 1783

143 FAUJAS DE SAINT-FOND (Barthélemy) DESCRIZIONE DELLE
EXPERIENZE della macchina aerostatica dei signori di Montgolfier, e di
quelle, alle quali ha dato motiva questa scoperta: seguita da ricerche
sopra l'altezza, alla quale giunse il pallone del Campo di Marte; sopra
la carriera da esso tenuta; sopra i differenti gradi di gravità dell' aria
negli strati dell' atmosfera. Da una memoria sopra il gaz infiamma-
bile, e sopra quello impiegato dai Signori di Montgolfier; sopra l'arte di
far le macchine aerostatiche, di tagliarle, d' empirle, e sopra la maniera
di sciogliere la gomma elastica, ec. ec. Da una lettera intorno ai mezzi
di dirigere queste macchine, a sopra i differenti usi, nei quali esser possono
impiegate. Opera corredata di ix. tavole in rame, rappresentanti le
diverse macchine, che sono state fino a questo giorno fabbricate, parti-
colarmente quella di Versaglies, e quella, in sui furono sollevati uomini
fino all' altezza di 324 piedi, ec., ec. Traduzione dal Francese. 8vo,
32 pp., 320 pp., 9 plates, contemporary limp boards, uncut, FINE COPY.
£8 10 0 *Graziosi: Venice 1784*

** EXCEEDINGLY RARE. Not in Haym, the British Museum, Zeit-
linger, Gamba, Tissandier, Wouwermans, Kühl, Patent Office General or
Aeronautical Catalogue.

EXACT SCIENCES: MISCELLANEOUS.

144 GUERICKE (Otto von) EXPERIMENTA NOVA (UT VOCANTUR)
MAGDEBURGICA de vacuo spatio. Quibus accesserunt simul certa quaedam
de aeris pondere circa terram; de virtutibus mundanis, et systemate mundi
planetario; sicut et de stellis fixis, ac spatio illo immenso, quod tam intra
quam extra eas funditur. Folio, engraved title, portrait, 2 double page
plates and numerous copper engravings (many full page), half brown
morocco. £16 10 0 *Joannes Janssonius a Walsberge:
Amsterdam 1672*

** "Guericke first took a tight wine cask, full of water, and attempted to
remove the liquid with a brass pump applied to the cask below. [See plate at
p. 74 of this edition]. But the bands and the iron screws holding the pump to
the cask gave way. It was attached more securely, then three strong men
pulling at the piston at last succeeded in drawing out the water. Thereupon a
noise was heard, as if the residual water within were boiling violently, and this
continued until the air had replaced the water pumped out. The leaky wooden
cask was replaced by a copper globe, then water and air were drawn out as
before. At first the piston moved easily, but later the strength of two men
could hardly move it, when 'suddenly with a loud clap and to the terror of all
the sphere collapsed.' A more massive and more exactly spherical metallic
vessel, Fig. 9, [See p. 74 of this edition], was secured and exhausted. 'On
opening the stop-cock the air rushed in with such force into the copper globe,
as if it wanted to drag to itself a person near by. Though you held your face at
a considerable distance, your breath was taken away; indeed, you could not hold
your hand over the stop-cock, without danger that it would be violently forced

EXACT SCIENCES : MISCELLANEOUS—*continued.*GUERICKE (OTTO VON)—*continued.*

down." Guericke next invented air-pumps, the first form of which is illustrated in Fig. 10 [p. 76 of this edition]. Its tap with the stop-cock was detachable, so that objects to be experimented upon might be placed in the receiver. As an extra precaution against leakage, the stop-cock was made to stand under water which was poured into the conical vessel. Numerous experiments were made with this pump. A clock in a vacuum cannot be heard to strike; a flame dies out in it; a bird opens its bill wide, struggles for air, and dies; fishes perish, grapes can be preserved six months *in vacuo*. A long tube, connected with an exhausted globe above and dipping in water below, was his water barometer. He explains the rise of the water in the tube by the pressure of the air. He observes fluctuations in the height of the water column and uses the instrument for weather predictions. A miniature man of wood, moved up and down inside the tube and by his finger indicated the pressure of the water at any moment. [See p. 123 of this edition]. Guericke's experiment of weighing a receiver, first when full of air, and again when exhausted, has held its place in elementary books. The same is true of his Magdeburg hemispheres. He constructed such hemispheres, about 1.2 feet in diameter, and made a test in 1654 at Regensburg before the Reichstag and Emperor Ferdinand III. According to his calculations a force of 2686 pounds was needed to overcome the atmospherical pressure holding the hemispheres together. They were pulled apart only after applying sixteen horses, four pairs on each hemisphere. [For a double page plate illustrating this experiment see p. 104]. On that occasion Guericke made other experiments, and he happened to assert that if you were to blow your breath into a large exhausted receiver, you would that moment breathe your last. The truth of this being doubted he illustrated the power of 'suction' by a new experiment. A cylinder of a large pump had a rope attached to its piston which was laid over a pulley and divided into branches on which twenty or thirty men could pull. As soon as the cylinder was connected with an exhausted receiver, the piston was suddenly pushed down by the atmospheric pressure and the men at the ropes were thrown forward." (F. Cajori : *History of physics*, pp. 67-70).

"Otto von Guericke of Magdeburg generated electricity by holding his hands against a rotating sphere of sulphur. This once famous contrivance is the forerunner of the friction electric machine. He discovered electric induction and made a number of other interesting observations. [Pp. 128-130 of this edition]. (Op. cit. p. 96).

P. 176 contains a map of the moon. Pp. 112-113 contain an engraving and description of the earliest airgun.

AUTHOR'S PRESENTATION COPY, WITH A LATIN INSCRIPTION ON TITLE : "Karl Mieg. The gift of the author."

145 [HARRIS (John)] A PLEASANT AND COMPENDIOUS HISTORY of the first inventers and instituters of the most famous arts, misteries, laws, customs and manners in the whole world. . . . To which is added, several curious inventions, peculiarly attributed to England and Englishmen. 16mo, contemporary sheep. £5 10 0

For John Harris : London 1686

** FIRST EDITION. Plomer : *Dict. of Printers*, 1668-1725, p. 147. CONTENTS : Mnemonics : amber : banquets and delicate dishes : guns : hunting and fishing : libraries : measures and weights : paper, the first maker of it : printing, when, where, and by whom it was invented : Jope Joan : Caxton : coaches : watches : telescope : spinning : copperas : pins : an engine for cutting tobacco : cane chairs : colouring and marbling of books : engine to extinguish fire : 4 pp., advertisements at end.

EXACT SCIENCES : MISCELLANEOUS—*continued.*

146 HERO MECHANICUS. DE GLI AUTOMATI, overo machine se moventi, libri due, tradotti dal Greco da Bernardino Baldi, Abbate di Guastalla. Novamente ristampato. Con ogni diligenza riccoretto. Sm. 4to, 48 ll., engraved title, illustrations in text, modern parchment, gilt. £2 10 0 *Giovanni Battista Bertoni: Venice 1601*

** Not in Haym, or Brunet.

147 MANBY (George) AN ACT FOR GEORGE MANBY TO PROHIBIT ANY TO MAKE USE OF HIS INVENTION for the Boiling all sorts of Liquors, for Fourteen years. Folio, 3 pp., uncut, wrappers. 7/6
London: Ed. Husband and John Field 1650

** Extracted from a volume of statutes.

148 OBSERVATIONS ON A PAMPHLET, entitled, REMARKS ON THE DIFFERENT CONSTRUCTION OF BRIDGES, by Charles Marquand. 12mo, plate, wrapper. 15/- *For the Author: London 1749*

** FIRST EDITION. Note on title: "This pamphlet was certainly written by Batty Langley, J.P."

149 PAPIN (Denis) A NEW DIGESTER OR ENGINE FOR SOFTENING BONES, containing the description of its make and use in this particulars: viz., cookery, voyages at sea, confectionary, making of drinks, chemistry, and dying. With an account of the price a good big engine will cost, and of the profit it will afford. Sm. 4to, folding plate, modern wrapper. £9 10 0 *J. M. for Henry Bonwicke: London 1681*

** "An apparatus for boiling food under pressure. . . . Under the date 12 April, 1682, Evelyn records in his *Diary*, how he took part in a 'philosophical supper' at the Royal Society, cooked in Papin's digester. . . . Of all Papin's inventions this is the most practical, and is in use at this day." (D.N.B. XV. 192).

150 RAMELLI (A.) DIVERSE ET ARTIFICIOSE MACHINE. Folio (14 $\frac{5}{8}$ by 9 in.), numerous plates, old calf gilt, joints rubbed. LARGE COPY. £12 0 0 *The Author: Paris 1588*

** FIRST EDITION. COLLATION: 1 leaf, *7, **, a-s⁸ t⁶ u-z A-D⁸ E-K⁴.². L⁶ M-P⁴.². Q⁴ R-X⁸ Y⁴ Z Aa² Bb⁸ Cc-Ff⁴.². Gg-Kk⁶.². Haym iv, p. 90, No. 7; Brunet IV, 1095; "Rare et recherché"; Watt 789^b; Biographie Universelle xxxviii, p. 45; British Museum General Catalogue, "R," v, p. 125; Bibliotheca Chemico-Mathematica 3881; Poggendorff II, 561; Graesse VI, p. 20; Beck, pp. 206-234.

Ff. 317^b-338^a are occupied by the description of various patent MILITARY ENGINES. Ff. 316^a-317^a describes a patent LIBRARY APPLIANCE, consisting of a number of reading desks on a wheel, by means of which a student may consult numerous works at once without getting up from his chair.

EXACT SCIENCES : MISCELLANEOUS—*continued*.

151 RHODE (Joh., 1587-1659) DE ACIA Dissertatio Ad Cornelii Celsi mentem Qua simul universa Fibulae ratio explicatur [etc.]. 4to, numerous illustrations, including *fibulae*, or "safety" pins and buckles, ornaments, etc., worked in steel: most of the illustrations are woodcuts in the text, but there are four engraved plates; leaves browned throughout, mottled calf, with the Arms of Pierre Daniel Huet (1630-1721), Archbp. of Avranches, in gilt on sides, his large armorial dated ex-libris inside cover, and the strip which he always used, with legend "Ne extra hanc Bibliothecam efferatur. Ex obediencia" pasted at foot of title. £4 5 0
*Typis Matthiae Godicchenii, Sumptibus Petri Hauboldi
 Hafniae [Kjöbenhavn] 1672*

**Biog. Univ., xxxvii, 481—"Il y démontre, contre l'opinion de J. J. Chifflet, et d'autres médecins, que Celse employait, pour les sutures, le fil de lin, et non pas le fil de métal . . . curieuse dissertation." A rare book on steel working, with a life of Cornelius Celsus.

152 SCHAEFFER (Mr.) DESCRIPTION D'UNE MACHINE inventée en Angleterre et perfectionnée en Allemagne pour blanchir le Linge. 12mo, *folding plate of the washing machine*, old calf. £2 0 0
J. G. Bauer : Strassburg 1767

153 [STRICKLAND (Mary)] A MEMOIR OF THE LIFE, WRITINGS, AND MECHANICAL INVENTIONS OF EDMUND CARTWRIGHT. 8vo, *folding plate*, and illustrations, original brown cloth, a little used. 7/6
Saunders and Otley : London 1843

** Cartwright was the reputed inventor of the power loom. D.N.B. VIII p. 1133.

154 SUTTON (Samuel) AN HISTORICAL ACCOUNT, or a new method for extracting the foul air out of ships, etc., with the description and draught of the machines, by which it is performed: in two letters to a friend. The second edition, to which are annexed two relations given thereof to the Royal Society, by Dr. Mead and Mr. Watson, and a discourse on the scurvy by Dr. Mead. 8vo, 8 pp., 120 pp., one *folding plate*, original calf gilt, with the bookplate of Sir Joseph Copley, Bart. 15/-
For J. Brindley : London 1749

155 TURNOR (Hatton) ASTRA CASTRA: Experiments and Adventures in the Atmosphere [Index]. 4to, numerous illustrations, *flying men, balloons*, etc., and portraits of famous aeronauts, *Garnerin, the Montgolfiers*, etc., original blue cloth gilt, t.e.g. £2 10 0
Chapman and Hall : London 1865

** Lieut. Gen. Sir Henry Stork's copy [D.N.B. Epitome 1255]. Contents: Roger Bacon on flying; Wilkins, Bp. of Chester; Borelli's *De Motu Animalium*; Lana's propositions; The Montgolfiers; Lunardi; The first ascent in England; Garnerin; Ascents before 1800; 1800-1825; 1825-1840; 1840-1864; War Balloons, Caricature, and the Ridicule the Science has undergone, etc., etc.

EXACT SCIENCES : MISCELLANEOUS—*continued*.

156 WALKER (Thomas) A TREATISE ON THE ART OF FLYING by mechanical means, with a full explanation of the natural principles by which birds are enabled to fly; likewise instructions and plans for making a flying car with wings, in which a man may sit, and, by working a small lever, cause himself to ascend and soar through the air with the facility of a bird. Illustrated with plates. By Thomas Walker, portrait painter, Hull. 8vo, folding frontispiece (slightly defective), contemporary boards, calf back. £14 10 0 *Joseph Simmons: Hull 1810*

** FIRST EDITION. Lowndes, p. 2814.

THE FIRST ENGLISH TREATISE ON MECHANICAL FLIGHT. In spite of the fact that this book is stated to contain "plates" it has only the frontispiece.

157 W[ILKINS] (J[OHN], *Bp. of Chester*) MATHEMATICALL MAGICK: or, The wonders that may be performed by Mechanicall Geometry. 12mo, numerous copper and woodcuts of mechanical devices, etc., including *two land-yachts*. Old calf, gilt. £3 12 6
M. F. for Sa. Gellibrand: London 1648

** FIRST EDITION. This book treats, *inter alia*, of air-guns, submarines, human flight, and perpetual motion. One of the chapter headings reads: "A resolution of two of the chief difficulties that seem to oppose the possibility of a flying chariot."

158 W[ILKINS] (J[OHN], *Bp. of Chester*) MATHEMATICALL MAGICK; or, The wonders that may be performed by Mechanicall Geometry. 12mo, numerous copper and woodcuts of mechanical devices, etc., including *two land-yachts*. Old Calf, gilt, with the book-plate of George Garnier. £4 10 0
M. F. for Sa[muel] Gellibrand: London 1648

** FIRST EDITION. Bib. Chem. Math. 3112.

159 WILKINS (J[OHN], *Bp. of Chester*) MATHEMATICAL MAGICK. 12mo, portrait and diagrams, old sheep (rebacked). £3 10 0
For Edw[ard] Gellibrand: London 1680

160 WILKINS (J[OHN], *Bp. of Chester*) MATHEMATICAL MAGICK. 12mo, portrait, diagrams, contemporary calf, one joint weak. £1 15 0
For Ric[hard] Baldwin: London 1691

** Fourth Edition.

161 WORCESTER (Henry Somerset, *Marquis of*) A CENTURY OF THE NAMES AND SCANTLINGS of such inventions, as at present I can call to mind. . . . Sm. 12mo, old wrappers, uncut. £1 8 0
T. Payne: London 1746

** Lowndes, p. 2991. CONTENTS: ciphers: military subjects: clocks: "A often discharging pistol": "A fire water work" (steam-engine): "A flying man": "A continually going watch": etc., etc. A leaf of advertisements at end.

EXACT SCIENCES : MISCELLANEOUS—*continued*.

162 WORCESTER (Marquis of) A CENTURY. [*Another copy of the 1767 edition.*] 16mo ($4\frac{7}{8}$ by $2\frac{3}{4}$ in.), old calf, gilt back. £1 1 0
1767

** PROVENANCE : John Whitefoord Mackenzie (Seal armorial bookplate : Franks 192494).

163 WORCESTER (Marquis of) A CENTURY. [*Another copy of the 1767 edition.*] 16mo ($4\frac{1}{2}$ by $2\frac{1}{2}$ in.), old calf, one joint cracking. 12/6
1767

** PROVENANCE : John Hopton Russell Chichester (Bookplate : Franks 5742/5743).

164 WORCESTER. DIRCKS (Henry). THE LIFE, TIMES, AND SCIENTIFIC LABOURS OF THE SECOND MARQUIS OF WORCESTER. 8vo, Boards. £1 0 0
London 1865

165 DIRCKS (Henry) WORCESTERIANA. A Collection of Literary Authorities, affording historical, biographical and other notices relating to Edward Somerset, Sixth Earl and Second Marquis of Worcester, Inventor of the Steam Engine, and his immediate family connexions. with critical notes. 8vo, original brown cloth, uncut and unopened. 16/-

Printed for the Author : London 1866

** No. 41 of 100 copies.

GEOLOGY.

166 AGRICOLA (Georgius, 1494-1555, M.D.) OPERA DI GIORGIO AGRICOLA DE L'ARTE DE METALLI, partita in xii. libri, ne quali si descrivano tutte le sorti, e qualità de gli uffizij, de gli strumenti, delle macchine, e di tutte l'altre cose attenenti a cotal arte, non pure con parole chiare, ma eziandio si mettano a luoghi loro le figure di dette cose, ritratte al naturale, con l'aggiunta de nomi di quelle, cotanto chiari, e spediti, che meglio non si puo desiderare, o hauere. Aggiugnesi il libro del medesimo autore, che tratta de gl' Animali di sottoterra, da lui stesso corretto, & riueduto. Tradotti in lingua Toscana da M. Michelangelo Florio Fiorentino. Con l'Indice di tutte le cose più notabili alla fine. Folio ($12\frac{1}{8}$ by $8\frac{1}{8}$ in.), Froben's "caduceus" device on title-page and at end, numerous woodcuts of digging ore, mines, mining tools, smelting, casting, etc., leaves browned, old vellum. £6 10 0

Hieronymus Frobenius : Basle 1563

** FIRST ITALIAN EDITION. "Agricola, a native of Saxony, acquired a perfect knowledge of the processes of metallurgy from the miners of Chemnitz, and perceived the immense resources that might be drawn from the abysses of the earth. 'He was the first mineralogist,' says Cuvier, 'who appeared after the revival of science in Europe. He was to mineralogy what Gesner was to zoology; the chemical part of metallurgy, and especially what relates to assaying, is treated with great care, and has been little improved down to the end of the eighteenth century.' It is plain that he was acquainted with the classics, the Greek alchemists, and many manuscripts." (Hallam).

GY—continued.

167 AGRICOLA (Georgius) DE RE METALLICA. Translated from the first Latin edition of 1556, with Biographical Introduction, Annotations, and Appendices upon the Development of Mining Methods, Metallurgical Processes, Geology, Mineralogy, and Mining Law from the earliest times to the 16th Century, by Herbert Clark Hoover and Lou Henry Hoover. Folio, illustrations, parchment, uncut and unopened. £4 10 0 *The Mining Magazine: London 1912*

** The only English translation of this work, it contains many facsimiles of woodcuts ascribed to Hans R. Manuel and Basilius Wehring.

168 ANALES DE MINAS PUBLICA LOS DE ORDEN de S.M. La direccion General del Ramo. 4 vol., sm. 8vo, maps, and diagrams, modern Spanish calf. £3 15 0 *Madrid: 1838-1846*

** COLLATION: Vol. I., [4] + XVI., + 458 pp., 2 folding plates; Vol. II., [2] + II. + IV. + 458 pp., 4 folding plates; Vol. III., [4] + 460 pp., 5 folding plates; Vol. IV., [2] + 588 pp., 9 folding plates.

169 ARMSTRONG (W. G.) THREE REPORTS ON THE USE OF THE STEAM COALS OF THE "HARTLEY DISTRICT" of Northumberland in marine boilers. 8vo, original wrapper slightly torn. 12/6 *A. Reid: Newcastle-on-Tyne 1858*

170 AUGURELLO (Giovanni Aurelio) CHRYSOPOEIAE LIBRI III. et Geronticon Liber primus. Sm. 4to, fine renaissance border round title, fine historiated woodcut initials, large printer's device at end, half sheep. £3 5 0 *Johann Froben: Basle, August 1518*

** Brunet I, 556, Watt 55e, 112 pp. A poem on the "art" of transmuting base metal into gold.

171 BARBA (Alvaro Alonso) THE ART OF METALS: in which is declared their generation, and the concomitants of them. . . . Translated by the R.H. Edward, Earl of Sandwich. 12mo, contemporary sheep. FINE COPY. With the bookplate of William Price, Esq. at Rhuvlase in Merth. shire. Ao. Dni. 1755. £4 15 0 *For S. Mearne: London 1674*

** Originally published as the *Firt* [and second] book of metals, 1670. (Brit. Mus. Gen. Cat. "B" VI. 256). Ferguson I. 70.

172 BARBA (Alvaro Alonso) ARTE DE LOS METALES, en que se enseña el vardadero beneficio de los de oro, y plata por azoque. El modo de fundirlos todos, y como se han de refinar, y apartar unos de otros. Compuesto por el Licenciado Alvaro Alonso Barba, natural de la villa de Lepe, en la Andalucia, cura en la Imperial de Potosi de la Parriquia de San Bernardo. Nuevamente ahora añadido con el tratado de las antiguas minas de España, que escribió Don Alonso Carrillo y Laso, Caballero del Avito de Santiago, y Caballerizo de Cordova. Con Licencia. Sm. 4to, woodcut, contemporary limp vellum, with ties. £5 10 0

The widow of Manuel Fernandez for Manuel de Godos: Madrid 1770

GEOLOGY—*continued*.

173 BLANCHARD and McKEAN. TUNELLING BY MACHINERY: description of perforators and plans of operations in mining and tunnelling, desired by Herman Haupt. 8vo, folding plates, original printed wrapper. 12/6
H. J. Leisenning: Philadelphia 1867

174 BUSHELL ([Thomas]) ABRIDGMENT OF LORD CHANCELLOR BACON'S PHILOSOPHICAL THEORY in mineral prosecutions. Sm. 4to, woodcut on title (repeated in text) and woodcut diagram, imprint cut into, contemporary sheep, gilt, g.e. FINE COPY. £22 0 0
[*Thomas Newcomb*]: London 1659

** FIRST EDITION. (Hazlitt II. 677-678). RARE. Not in Poggen-dorff, Zeitlinger or Agassiz. Lowndes (332) is the only authority for stating that this book should contain a portrait, and we have not been able to trace a copy with it. It is lacking in the British Museum copies, nor is it mentioned by Hazlitt, and two copies recorded in bookseller's catalogues are without it. The volume includes a reprint of Bacon's *New Atlantis*, with a separate title, on which we have the printer's name. The book contains a number of short papers relating to mining, etc., and a short poem said to have been recited to Charles I. on the occasion of this visit to "Bushell's Rock." The author was employed by Lord Bacon in his youth and states that most of his ideas on mineralogy are derived from him. (D.N.B. III. 487). For an account of this book see *The Bookworm*, 1869.

SEE ILLUSTRATION, PAGE 52.

175 CUVIER (Georges Chrétien Léopold Frédéric Dagobert, *Baron*) DISCOURS SUR LES REVOLUTIONS DE LA SURFACE DU GLOBE, et sur les changements qu'elles ont produits dans le règne animal. 8vo., six folding plates and two tables, original boards, leather back. £4 10 0
G. Dufour and Ed. D'Ocagne: Paris 1825

** FIRST SEPARATE EDITION. With a twelve page catalogue of books and a four page prospectus. This book is one of the great landmarks in the history of geology and palaeontology. Its perusal is indispensable to the student who would understand the doctrines in vogue prior to the publication of Lyell's *Principles of Geology* and Darwin's *Origin of Species*.

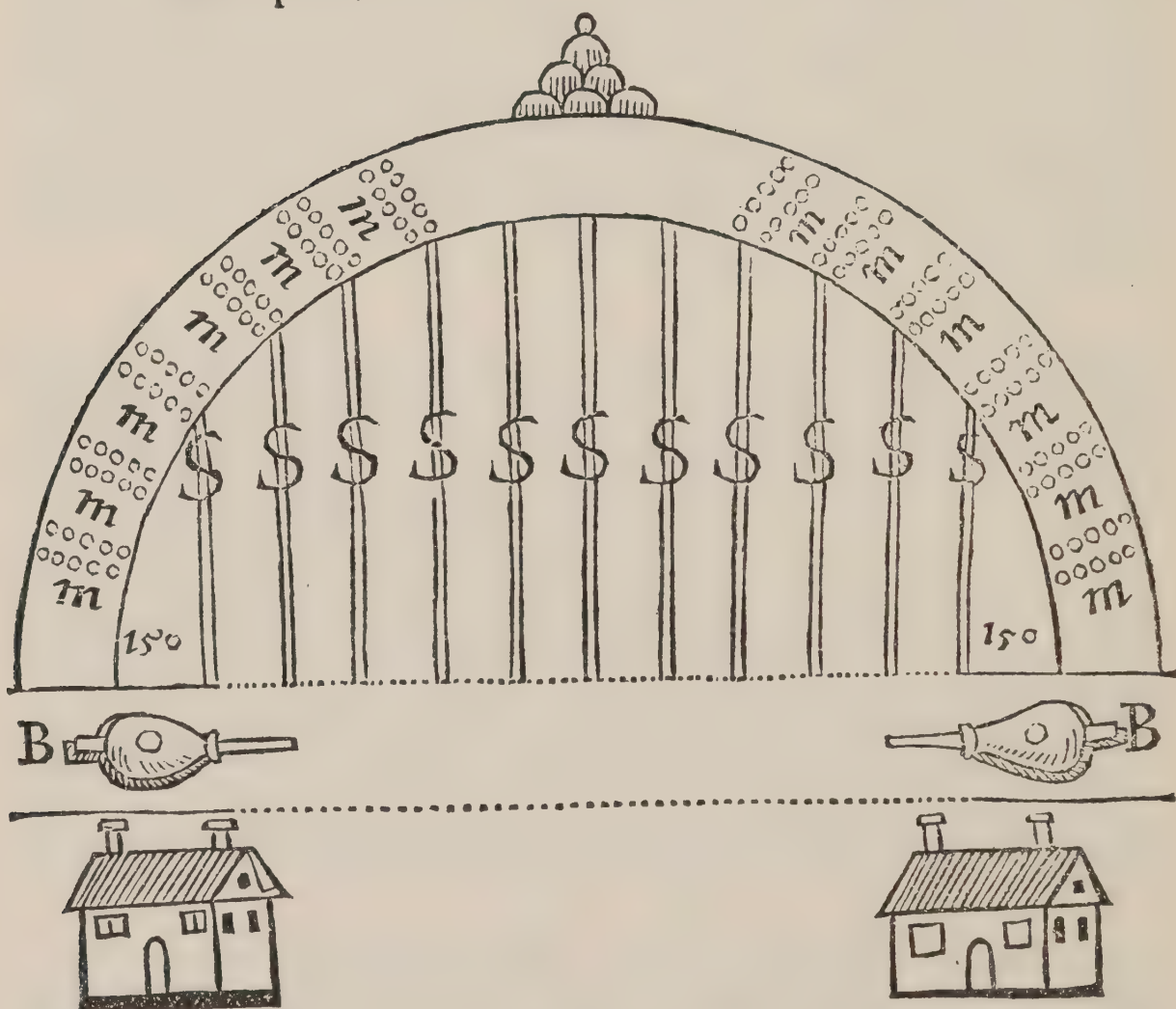
"In this important work he propounds the theory of correlation of forms in organised beings and arrives at the following conclusions: that the career of man on this planet began about five or six thousand years ago; that no vestiges of human species are found among fossil remains; that the present form of the continents was produced by a great revolution which occurred before the origin of existing animal species." (Thomas: *Biog. Dicty.* p. 703).

176 DAVY (Humphrey, *Bart.*) ON THE SAFETY LAMP FOR COAL MINERS; with some researches on flame. 8vo, folding plate, half calf, a little rubbed. £2 10 0
H. Bryer for R. Hunter: London 1818

** D.N.B. V. 641-642: "On 3 Aug. 1815 Davy acknowledges a letter which he had received from the Rev. Dr. Gray, directing his attention to the destruction of human life by explosions in working our coal mines. Davy gave immediate attention to the subject, and being supplied with specimens of fire damp by John Buddle of Newcastle, he began to investigate its nature. On 31 Oct., 1815, Davy communicated to Dr. Gray that he had discovered a safe lamp, on 2 Nov., read a paper on the fire damp before the Royal Society, and on the 14 Dec. he

(1)

A Table setting forth the manner of that great Philosopher the Lord Chancellor Bacons searching for Mettals by making Addits through the lowest Level of Hills or Mountains, and conveying Aire into the innermost parts of their Center by Pipe and Bellows; as well as by Art to mollifie the hardest Stone, without the tedious way and inestimable charge of sinking Aery Shafts; and is now intended to be put in practice by his Menial Servant Thomas Bushel, on Hingston-Down, and other places, according to his Lordships command, and the approbation of that great Mineralist, Sir Francis Godolphin.



First, the true description of *Hingston down*, lieth in Longitude *East* and *West* five Miles, with Millions of Shafts that have been visibly Sunk upon several loads of Mettall, by the *Romans*, *Danes*, *Saxons*, *Jews*, and *Britans*, And is in breadth 700 Fathom, at the *Basis* lying *North* and *South*, as well as in depth 200 Fathom

A

BUSHELL (THOMAS). LORD BACON'S THEORY.
See Item No. 174.

GEOLOGY—*continued*.DAVY (HUMPHREY)—*continued*.

sent to his friend Gray some models of lamps and lanterns, based on his discovery that 'the fire damp will not explode in tubes or feeders of a certain small diameter.' Glass tubes were employed at first, but Davy soon found that metallic tubes, such as wire gauze, resisted equally well the passage of the flame. This led to his surrounding the flame of his lamp with wire gauze. The explosive gas freely entered the lamp and exploded within it, the explosion not passing outward through the apertures of the wire." This book is a collection of the principal memoirs written by Davy on this subject.

177 HOUGHTON (Thomas) RARA AVIS IN TERRIS: or the compleat miner, in two books; the first containing the liberties, laws and customs of the lead-mines, within the wapentake of Wirksworth in Derbyshire.

. . . 16mo, one woodcut, old calf, rebaked. £11 0 0

London 1681

** FIRST EDITION. This edition collates A-E12. Hazlitt describes an edition with the imprint *William Cooper: London 1681*, collating A-E12 F5: we do not know which is the earlier.

"Houghton is valuable for the laws relating to mines, and his explanations of miners' terms, etc." (*Bib. Chem. Math.* 2008).

178 HOUGHTON (Thomas) RARA AVIS IN TERRIS: or, The Compleat miner: in two books; the first containing, The liberties, laws and customs of the lead-mines, within the Wapentake of Wirksworth in Derbyshire, in fifty-nine articles, being all that was made. The second teacheth, The art of dialling and levelling grooves, a thing greatly desired by all miners, being a subject never written on before by any. *Unius labor, multorum laborem allevat.* By Thomas Houghton. Sm. 12mo, one diagram, contemporary sheep, rebaked. £8 0 0 London 1681

** FIRST EDITION. (Watt, 519 h).

179 LAPIDARIO DEL REY D. ALFONSO X. CODICE ORIGINAL. 4to. Edited by Pedro de Madrazo. Chromolithographic facsimile of a famous 13th century manuscript, with a large number of initial letters, miniatures, and signs of the zodiac. Brown boards, linen back, paper label, t. e. g. £4 0 0 Madrid 1881

** The MS. comprises 266 pages, the original is in the Biblioteca del Escorial.

180 MARSAUT (J. B.) COAL-WASHING APPARATUS AT BESSEGES, France. 8vo, wrapper. 5/- 1879

181 ON NEWCASTLE COALPITS. By J. C. MS. VERSES of 54 lines, commencing: "England's a perfect world; Has Indies too; Correct your maps, Newcastle is Peru; Let haughtie Spaniards triumph till 'tis told Our sootie minerall purifies their gold . . ." Bound in a 12mo volume among other poems, recipes, etc., old calf, shabby. £3 10 0

[Circa 1666]

** The above date is assumed in view of the following, which is among the contents of this volume: "The 2nd advice to the painter for describing of our navall businesse in imitation of Mr. Waller being the last work of Sr. John Denham. London. Written for the company of Poets, 1666.

GEOLOGY—*continued*.

182 PETTUS (Sir John) FLETA MINOR. The Laws or Art of Nature, in knowing, judging, assaying, fining and inlarging the Bodies of confined Metals. In two Parts. The first contains Assays of Lazarus Erckern . . . The second Essays on Metallic Words [a glossary of metallurgical terms, etc.]. Folio (13½ by 8⅝ in.), portrait by R. White, and 43 copper engravings of FURNACES, RETORTS, etc., contemporary calf. FINE COPY. £4 5 0

Thomas Dawkes for the Author: London 1683

** FIRST EDITION.

183 PRYCE (William) MINERALOGIA CORNUBIENSIS: A Treatise on Minerals, Mines and Mining: containing the theory and natural history of strata, fissures and lodes, with the best methods of discovering and working of coal, copper and lead mines, and of cleansing and metalizing their products; shewing each particular process for dressing, assaying, and smelting of ores. To which is added, an explanation of the terms and idioms of miners. Folio, portrait, folding diagrams and tables, half calf. FINE COPY. £3 0 0 *James Phillips: London 1778*

** FIRST EDITION. D.N.B., xvi, p. 429: "It [*Mineralogia*] was the result of careful study of the mining world of Cornwall, and is still of value, both for historical purposes, and for practical mining."

184 S[TRINGER] (Moses) OPERA MINERALIA EXPLICATA: or, The mineral kingdom, within the dominions of Great Britain, display'd. Being a compleat history of the antient comporations of the City of London, of and for the mines, the mineral and battery works. With all the original grants, leases, instruments, writs of privilege and protection, by sea and land, from arrest (except in the mineral courts); or being prest, or serving juries and parish-offices: as also the records of the said mineral courts, from the Conquest down to this present year, 1713. Likewise proposals for new settlements and plentiful provision for all the industrious poor, be their number ever so great. [Books lately printed for Jonas Brown, at the Black Swan, near Temple Bar.] Sm. 8vo, woodcut "Arms of the Society of the Mineral and Battery Works" on p. 26; a few slight stains, contemporary sheep, gilt, some edges uncut. £3 5 0

For Jonas Brown: London [Undated, 18th Aug., after 1712]

** Lowndes p. 2531. RARE. Not in the Dictionary of National Biography, or Watt.

PROVENANCE: Sir Archibald Grant, of Monymoske, Bart., (second baronet, Jacobean armorial bookplate, original impression, Franks, No. 12497).

185 WEBSTER (John) METALLOGRAPHIA: or an history of metals. Wherein is declared the signs of ores and minerals both before and after digging, the causes and manner of their generations, their kinds, sorts and differences; with the description of sundry new metals, or semi-metals, and many other things pertaining to mineral knowledge. Sm. 4to, slightly stained at top, contemporary calf. £6 0 0

W. Kettelby: London 1671

MATHEMATICS.

186 ANDERSON (Robert) THE GENUINE USE AND EFFECTS OF THE GUNNE, as well experimentally as mathematically demonstrated . . . with tables of projection, etc., exactly calculated and their use exemplified. Folding diagram, some edges rough.

J[ohn] Darby, [Senior] for William Berry and Robert Morden : London 1674

** FIRST EDITION. D.N.B. I, p. 390, No. 2.

Bound with :

——— ANDERSON (R.) TO HIT A MARK AS WELL UPON ASCENTS AS DESCENTS, as upon the plain of the horizon : experimentally and mathematically demonstrated. [Of granadoes, carcasses and fire-balls. War-like musick illustrated, in several consorts of Phrygian flutes, clearly demonstrated by principles of musick and mathematicks.] Two works in one volume, old panelled calf. £4 5 0

For Robert Morden : London 1690

** FIRST EDITION. Dictionary of National Biography, Thin Paper Edition, Vol. I, p. 390, No. 3.

PROVENANCE : Sir Archibald Grant of Monymoske, Bart. (Second baronet. Jacobean Armorial bookplate, original impression. Franks 12497).

187 APOLLONIUS PERGAEUS. LOCORUM PLANORUM libri II, restituti a Roberto Simson, M.D. 4to, diagrams, contemporary manuscript notes, old half sheep. £2 10 0

Rob[ert] and And[rew] Foulis : Glasgow 1749

** FIRST COMPLETE EDITION.

188 ARCHIMEDES : OPERA. Graece et Latine. Adjecta quoque Eutocii commentaria, item Graece et Latine. Folio, diagrams and wood-cut initial letters, early manuscript notes, old vellum. £5 10 0

Johann Herwagen : Basle 1544

** FIRST EDITION. Bib. Chem. Math. 143.

189 BACON (Roger) OPUS MAJUS AD CLEMENTEM QUARTUM, Pontificem Romanum. Ex MS. codice Dubliniensi, cum aliis quibusdam colato, nunc primum edidit S[amuel] Jebb. M.D. Folio, LARGE PAPER, title in red and black, 3 diagrams, library stamp on end paper, old calf, joint worn. £15 0 0

William Bowyer : London 1733

** FIRST EDITION. D.N.B. I. 848. 7. Brunet I. 602. Watt 61. n. Allibone 97. Lowndes 98. Hoefer IV. 86. Encyc. Brit. III. 154. Bib. Nat. VI. 257. Larousse II. 34.

The publication of this volume may be said to have established Roger Bacon's true position in the history of science and philosophy. Before this date he was regarded as an ingenious alchemist, a skilled mechanician and a dabbler in the black arts. It now became apparent, however, that his main aim was the reform of the existing methods of scientific thought. The *Opus majus* rejects "authority" and verbal subtleties, and sketches in outline the major divisions of knowledge.

On page 357 occurs the passage which has given rise to the view that Bacon

MATHEMATICS—*continued.*BACON (ROGER)—*continued.*

invented a telescope and microscope; on p. 352 he speaks of lenses to aid the vision in reading and other close work, which suggests that he invented some kind of spectacles or reading glass; at p. 29 we have the first true explanation of the rainbow; and on p. 85 we are informed that the tides are due to the action of the moon; he also demonstrates the law of optics that the angle of incidence equals the angle of reflection. Perhaps one of his most amazingly modern idea is that the ultimate method of analysis in every branch of natural science is mathematical.

It is not certain whether Francis Bacon, whose *Novum Organum* is very similar in scope to the *Opus Majus*, was acquainted with his great namesake's doctrines, but it is curious to note that the phrase "praerogativae scientiarum" which frequently occurs here, is also used by him. It is well known that the geographical section, as reproduced in the *Imago mundi* of Pierre d'Ailly, was largely responsible for Columbus' adventurous voyage across the Atlantic Ocean.

The preface by Samuel Jebb contains an interesting summary of Bacon's life.

PROVENANCE: G. Bennett and Aylmer Probyn Maude. (Bookplates).

190 BORGIO (Pietro) LIBRO DE ABACHO. Sm. 4to, 100 ll., contemporary limp vellum, some leaves a little stained. £3 5 0

Bernardino de Bindoni: Venice, October 1540

** VERY RARE. Not in Haym, British Museum, De Morgan, or Bibliothèque Nationale Catalogue.

191 BOSCOVICH (Roger Joseph) THEORIA PHILOSOPHIAE NATURALIS redacta ad unicam legem virium in natura existentium. £2 10 0

Ex typographia Remondiniana: Venice 1763

** Probably the earliest essay embodying the modern doctrine of the interrelation of forces.

192 CAVALIERI (B.) COMPENDIO DELLE REGOLE DE TRIANGOLI, con loro demonstrationi. 16mo, wrapper. 8/- 1638

193 CARDANO (Girolamo) DE SUBTILITATE . . . Ab ipsa authoris recognitione, nunc demum emaculatiores . . . reddit. 12mo, old vellum. £1 12 0

Etienne Michel: Lyons 1580

** Brit. Mus. Cat. "C" X. p. 154.

CONTENTS. Cornelius Agrippa's unpublished books, p. 661; algebra, p. 270; ambergris, p. 208; amethysts, p. 265; spontaneous generation, pp. 354-521, 362, 366; antimony, pp. 212-3; "Aqua avenae." (an intoxicating liquor) p. 323; silk, p. 263; stars of the southern hemisphere, p. 137; size of the stars, p. 183; printer's ink, p. 177; authors who have written on demons, p. 692; guns, p. 62; quadrature of the circle, p. 555; motion of the heart, p. 489; duelling, p. 624; amber, p. 239; precious stones, pp. 244-89; books translated from Latin into the African [Arabic] language which are now lost, p. 482; pearls, p. 271; sapphires, p. 256-67; etc.

MATHEMATICS—*continued*.

194 CAVALIERI (B.) CENTURIA DI VARIJ PROBLEMI, per dimostrare l'uso, e la facilità de' logaritmi. 16mo, modern boards, roan label.
£1 1 0 1639

195 DIGGES (Leonard, *Mathematician*) A GEOMETRICAL PRACTICAL / TREATIZE named Pantometria, / diuided into three Bookes, Longimetra, Planimetra, and / Stereometria, containing rules manifolde for mensuration of all Lines, Superficies and Solides: with sundrie strange conclusions both by Instrument and with / out, and also by Glasses to set forth the true Description or exact Platte of an whole / Region. First published by Thomas Digges, Esq., and Dedicated to the Graue, / Wise, and Honourable, SIR NICHOLAS BACON, Knight, Lord Keeper of the Great / Seale of England. With a Mathematicall discourse of the fine regular / Platonicall Solides, and their Metamorphosis into other five compound rare Geometricall Bodyes, conteyning an hund- / dred news Theoremes at least of his owne In- / uention, neuer mentioned before / by anye other Geome- / trician. / [Rule] / Lately Reviewed by The Avthor / himselfe, and augmented with sundrie Additions, Diffini- / tions, Problemes and rare Theoremes, to open the pas- / sage, and prepare away (*sic*) to the vnderstanding / of his Treatize of Martiall Pyrotechnie / and great artillerie, hereafter to / be published. / [Woodcut.] / At London / Printed by Abell Jeffes / Anno. 1591. Sm. folio, numerous woodcuts, printed in black, Roman and Italic letter, original calf, rebaked. FINE CLEAN UNPRESSED COPY. £14 0 0 *Abel Jeffes: London 1591*

** Klinkowstroem, *Der Erfinder des Teleskops*. Herbert, p. 1162. Wood I. 415. Not in Greener, *Bib. of Gunnery*; or Ronalds, *Bibliography of Magnetism*. THIS BOOK CONTAINS THE EARLIEST KNOWN DESCRIPTION OF THE REFLECTING TELESCOPE and an early description of the theodolite. Klinkowstroem wrote the above paper to draw attention to Digges's claim to the invention. Fledhaus, *Lexikon der Erfindungen*, attributed the discovery to Zucchi, who published a description in 1616. The author was born at Barnham, Kent, and was educated at Oxford. A—Z, Aa—Cc, in fours.

196 DODGSON (Charles L., *Lewis Carroll*) SUPPLEMENT TO "EUCLID AND HIS MODERN RIVALS," containing a notice of Henrici's Geometry together with selections from the Reviews. 8vo, original grey printed wrapper, skilfully repaired, not affecting type. £9 10 0

Macmillan and Co., London 1885

** "Presentation copy, with inscription in the author's hand on title: "R. E. B. from C. L. D., Nov. 27, 1890."

Mr. Williams (*Bibliography of Lewis Carroll*, No. 46) quotes in the Madan Collection. Not in the British Museum or D.N.B.

197 DOUGLAS (Col. Sir Howard) A TREATISE ON NAVAL GUNNERY. 8vo, fine folding engraved plates and two folding tables, original boards, printed label on back. 12/6 *John Murray: London 1820*

MATHEMATICS—*continued*.

197a EUCLIDES. ΣΤΟΙΧΕΙΩΝ ΒΙΒΛ. ΙΕ. ΕΚ τῶν Θέωνος συνουσιῶν. Εἰς τοῦ αὐτοῦ τὸ πρῶτον, ἐξηγημάτων Πρόκλου βιβλ. δ'. Adjecta praefatiuncula in qua de disciplinis mathematicis nonnihil. [By the editor Simon Gryner]. Folio, [12] + 268 + 115 + [1] pp., text printed in Greek letter, preface, etc., in Roman letter, and side notes in Italic letter, mathematical diagrams, grotesque woodcut initials letters, device on title and at end, woodcut border to first page of text, (8 blocks), consisting of architectural designs, grotesques, flowers, Cupids, dragons, etc., early manuscript notes, stained and wormed, holes in some leaves, contemporary blind stamped calf, repaired. £12 0 0

Johann Herwagen: Basle, September 1533

** FIRST ISSUE of the FIRST EDITION of the ORIGINAL TEXT of Euclid's *Elements*, (having p. 65 printed "95"). Also the ONLY EDITION of the ORIGINAL TEXT of PROCLUS'S COMMENTARY (see Graesse II. p. 510). Mr. Charles Thomas-Stanford: *Early editions of Euclid's Elements*, No. 7 gives the pagination as: "After 6 preliminary leaves, 2-268, 1-115," thereby implying that the recto of the first leaf of the text does not carry a page-numeral: this is not the case in this copy and the one immediately following. Mr. Thomas-Stanford, pp. 7-8, says that the text of this edition "was edited from two manuscripts sent to Gryner, one from Venice, by Lazarus Bayfius, the other from Paris by John Ruellius; the commentary of Proclus from a manuscript supplied by John Claymond, president of Magdalen and later Corpus Christi College, Oxford." The book is dedicated to Cuthbert Tunstall, Bishop of Durham. The fourteenth book of the *Elements* was composed by Hypsicles.

198 EUCLIDES: ΣΤΟΙΧΕΙΩΝ ΒΙΒΛ. ΙΕ. [*Another copy (second issue)*]. Folio, some margins strengthened, covers of a sixteenth century calf binding neatly inlaid on sides, panel with gilt arabesque border, with leafy ornaments at corners and sides, within the panel a large ornamental line frame, in the centre the figure of Fortune, and seven stars within a double circle. £10 0 0 1533

199 EUCLID. LES NEUF PREMIERS LIVRES DE ELEMENS D'EUCLIDE. Traduits et commentez par J[ean] Errard. Device on title, diagrams, some leaves scribbled on, *Guillaume Auvray: Paris 1605*. La géometrie et pratique générale d' icelle. . . Par J. Errard. Device on title, woodcuts and diagrams, some edges uncut, *Ibid.* 1602. 2 works in one volume. Sm. 8vo, contemporary limp vellum, (soiled), remains of ties. £1 10 0 *Guillaume Auvray: Paris 1602-1605*

200 EUCLIDES. ELEMENTA. A. G. Fournier. 16mo, old calf. 17/6. *E. Story: London 1654*

201 GALILEI (Galileo) DISCORSO AL SERENISSIMO DON COSIMO II, Gran Duca di Toscana, intorno alle cose, che stanno in sù l' acqua, ò che in quella si muovono, di Galileo Galilei, filosofo, e matematico della medesima Altezza Serenissima. [*Device*]. Sm. 4to, diagrams, stained in places, device at end, boards, vellum back. £3 5 0 *Cosimo Giunti: Florence 1612*

MATHEMATICS—*continued.*

- 202 GALTRUCHIUS (P.) MATHEMATICAE TOTIUS INSTITUTIO.
12mo, frontispiece, old calf. 7/6 *J. Field: Cambridge 1668*

- 203 GASSENDI (Pierre) VIRI ILLUSTRIS FABRICII DE PEIRESC, Senatoris Aquisextiensis vita . . . Editio tertia, auctior, correctior, et distinctior. [Peireskii laudatio, habita in concione funebri academicorum Romanorum, die Decemb. 21, An. 1637. Jo. Jacobo Buccardo Parisino perorante. Gabrielis Naudaei ad Petrum Gassendum, de Peireskii obitu epistola. Ad vitam illustrissimi Peireskii auctarium. (By Pierre Borel). Illustris viri Nicolai Claudii Fabricii de Peiresc, Senatoris Aquisextiensis, MSS. priorum catalogus. Ex autographo Petri Puteani cum ipsis codicibus, qui apud Baronem Riantensem in hanc diem extant, attentissime collatus. Interpretatio vernacula selectorum aliquot nominum priorum.] Portrait of Peiresc, a few early manuscript notes. 4to, new polished calf. £5 5 0 *Adrian Vlacq: Hague 1655*

** Brunet, Vol. VI., No. 30592.

CONTENTS: Peiresc is chiefly interesting to bibliophiles on account of his bindings. An account of him from this point of view will be found in Guigard's *Nouvel armorial du bibliophile*, Vol. II., pp. 387—392. The volume also contains some interesting information on the abacus, mild steel, Arabic manuscripts, biblical manuscripts, Coptic manuscripts, Greek manuscripts, old Parr, polar exploration, aurora borealis, whales, the conjunction of the three superior planets in 1604, the lacteal veins, sun spots, the Medicean stars, discovered by Galileo (the satellites of Jupiter), observation of a transit of Mercury, a new star, the invention of the telescope, the valves of the veins.

- 204 GRAVESANDE (W. James) MATHEMATICAL ELEMENTS OF NATURAL PHILOSOPHY, confirmed by Experiments: Or an Introduction to Sir Isaac Newton's Philosophy. Written in Latin by W. James Gravesande. Translated into English by J. T. Desaguliers. 2 vols., 4to, illustrated with 127 copper-plates, all new engraven, contemporary mottled calf, gilt, with the book-plate of Sir George Shuckburgh, Bart. 18/-
W. Innys [etc.]: London 1747

- 205 HARRIOT (Thomas, *Author of "Virginia"*) ARTIS ANALYTICAE praxis, ad aequationes algebraicas nova, expedita, et generali methodo, resolvendas. 4to, old calf gilt. £25 0 0

Robert Barker and the heirs of John Bill: London 1631

** FIRST EDITION. THOMAS HARRIOT WAS THE AUTHOR OF *A brief and true report of the new found land of Virginia*, AND THE INVENTOR OF MODERN ALGEBRA.

MATHEMATICS—*continued*.

206 JORDANUS NEMORARIUS, and others: ARITHMETICA [with a commentary by Jacobus Faber Stapulensis]. Musica [by Jacobus Faber Stapulensis]. Epitome in libros arithmeticos Boethii [by Jacobus Faber Stapulensis]. Rithmimachiae ludus [by John Shirwood, Bishop of Durham]. Folio, **Gothic letter**, long lines, 72 leaves, mathematical diagrams, one or two small wormholes, a few manuscript notes, modern crushed morocco, gilt, g. e. £150 0 0

Johann Higmann and Wolfgang Hopyl: Paris, July 22, 1496

** Hain-Copinger 9436. Proctor *8137. NOT SEEN BY HAIN. For fac-similes see Smith: *Rara Arithmetica*, 62-63, and Claudin I, 408, II, 70.

FIRST EDITION of Jordanus.

The colophon of this book contains the earliest mention of a SCOTSMAN IN THE PRINTING TRADE: the following is a translation: "These two parts of the fourfold subject, both the foremost and chief of the liberal arts, with several aids thrown in, Johann Higmann and Wolfgang Hopil with their own great labour and at their own expense, have been solicitous to set together in type, with extreme accuracy for use in study, at Paris in the year of the salvation of the Lord, who formed all things by number and harmony, 1496, and on the 22nd July of that year completed the work, always devoting their labours wherever they will be serviceable for the benefit of the studious. AND THIS SAME ALSO DOES DAVID LAUXIUS, A BRITON OF EDINBURGH, AS THE ASSIDUOUS SUPERVISOR OF THE PRESS THROUGHOUT FROM THE ORIGINAL."

Jacobus Faber Stapulensis, or Jacques Lefevre d'Etaples, an eminent French scholar and theologian, born at Etaples about 1455. He was condemned as a heretic by the Sorbonne, but was protected by Francis I, who employed him as preceptor to his son. Lefevre produced the first complete French version of the Bible (1530), which is used by the French protestant churches. Erasmus expressed veneration for his character. Died in 1537. THE TREATISE ON MUSIC APPEARS HERE FOR THE FIRST TIME: it is in reality an essay on fractions employing musical terminology.

John Shirwood, Bishop of Durham, M.A., University College, Oxford, 1450; brought Greek authors from Italy; Edward IV's Advocate at Rome; chancellor of Exeter, 1460; Archdeacon of Richmond, 1465; prebendary of York, 1471; partisan of Richard III; Bishop of Durham, 1485-1494; went from Burgundy to Rome, where he died. The *Arithmomachia*, which was originally published in 1482, is the only work of Shirwood which has come down to us. It contains a description of a singular game on a "tabula," slightly resembling a chess-board which he says was taught him at Calais by George Neville, Archbishop of York. (D.N.B. xviii, 146).

For further information the reader should consult John Scott's pamphlet (also included in the Edinburgh Bibliographical Society Papers,—1891): *The Arithmetica of Jordanus Nemorarius*, 1496.

207 JORDANUS NEMORARIUS, and others: ARITHMETICA. [Another copy.] A few manuscript notes, boards. £135 0 0 1496

208 KEILL (John) INTRODUCTIONS AD VERAM PHYSICAM et veram astronomiam quibus accedunt, trigonometria; de viribus centralibus; de legibus attractionis. 4to, folding diagrams, original boards (worn), uncut. 15/-

Jan and Herm. Verbeek: Leyden 1739

MATHEMATICS—*continued*.

209 MARTENA (Giovanni Battista) FLAGELLO MILITARE: ovvero il terror de conflitti. . . La prima tratta de trabicchi, la seconda de petardi, la terza de burlotti, e fuochi artificiali da mare, arte militare. Sm. 4to, frontispiece, portrait, and 18 plates, old vellum, SOME LOWER EDGES UNCUT. £14 0 0 For Carlo Troise: Naples 1687

** There is no work by this author in the British Museum Catalogue and the only notice of this book which we have been able to trace is in Ayala. According to internal evidence, he was an artillery officer in the service of the King of Naples, and was born at Maruggio. The book itself is of exceptional interest, as it belongs to that rare class of early military literature which deals exclusively with guns and explosives. Practically every form of gun (not small arms), projectile, and bomb then known and used either on land or at sea is discussed, and illustrated by 18 copperplates. Why the book should be so excessively rare is difficult to conjecture, but it is practically certain that no other copy will be offered for sale for many years.

210 MUNSTER (Sebastian) RUDIMENTA MATHEMATICA. Haec in duos digeruntur libros; quorum prior geometriae tradit principia seu prima elementa, una cum rerum et variarum figurarum dimensionibus. Posterior vero omnigenum horologiorum docet delineationes, autore Sebastiano Munstero. [Woodcut.] Folio, numerous mathematical diagrams, device at end, title leaf slightly soiled and frayed, a few stains, old sheep, r. e. £5 0 0 Henricus Petrus: Basle, March 1551

211 NAPIER (John, *Inventor of logarithms*, 1550-1617) RABDOLOGIAE, seu numerationis per virgulas, libri duo. 16mo (15¾ by 3⅛ in.), folding plates and woodcuts, modern dark blue morocco, gilt, TALL COPY. £38 0 0 Andrew Hart: Edinburgh 1617

** FIRST EDITION. MacDonald, p. 131; Cowan, p. 10; Bibliotheca Chemico-Mathematica 3188; Poggendorff II, 253; Hazlitt III, p. 168; Aldis 518; British Museum Catalogue of English Books, pp. 1134-1135; Sayle 5959; Watt 695a; Lowndes, p. 1647; Allibone, p. 1399; D.N.B., xiv, p. 64: "He [Napier] there [in the dedication] stated that he had always endeavoured; according to his strength and ability, to do away with the tediousness of calculations. . . . He explains the title, *Rabdologia*, as 'numeration by little rods.' The rods being usually made of bone or ivory, were familiarly called 'Napier's bones' (cf. Butler, *Hudibras*, ed. Grey, 1819, III, p. 48). By means of them multiplication and division could be performed by methods which, though now they seem cumbrous enough, were received throughout Europe as a valuable aid to the rude arithmetic of the day. . . . In an appendix he explains another invention for the performance of multiplication and division . . . 'the most expeditious of all'—by means of metal plates arranged in a box. This is the earliest known attempt at the invention of a calculating machine."

The extraction of square and cube root could also be performed by their help, in conjunction with two larger rods, the method of constructing which is described. . . . There is also added his Local arithmetic, wherein he describes how multiplication and division, and even the extraction of roots, may be performed on a chess board by the movement of counters"; Huth Auction

MATHEMATICS—*continued*.NAPIER (JOHN)—*continued*.

Catalogue 5219; Encyclopaedia Britannica, xix, p. 175: "To Napier seems to be due the first use of the decimal point in arithmetic. Decimal fractions were first introduced by Stevinus, but he used cumbrous exponents (numbers enclosed in circles): thus Stevinus would have written 156.456 as 156 (o) 4 (1) 5 (2) 6 (3)." At p. 21 of this book we have a chapter, "Admonitio pro decimali arithmetica," in which the author recommends the decimal system and suggests the "point" system (here printed as a comma) as more convenient than that of Stevinus. In this chapter he expresses the number 1993 $\frac{273}{1000}$ as 1993,273 "qui significat 1993 integra, et 273 millesimas partes"; Cantor II, p. 723.

John Napier, or Neper, (1550-1617), Laird of Merchiston; inventor of logarithms; son of Sir Archibald Napier, (1534-1608); educated at St. Andrews: infefted in the baronies of Edenbellie-Napier and Merchiston, 1751; entered into a bond for the loyalty of his father-in-law, Sir James Chisholm, 1593; had constant trouble in connection with disputes between his tenants and those of his neighbours, 1591 and 1611-1613; succeeded his father 1608, some family litigation being caused thereby; made valuable experiments in the use of manures, and invented an hydraulic screw for clearing coal-pits of water, for which he was granted a monopoly, 1597.

212 NAPIER (John) RADDOLGIA, overo, Arimmetica virgolare in due libri divisa; con appresso un' expeditissimo prontuario della moltiplicatione, e poi un libro di Arimmetica locale: quella mirabilmente comoda, anzi utilissima à chi, che tratte numeri alto [etc.]. Tradotte il Cavalier Marco Locatello. 12mo, folding diagrams, contemporary calf with Arms. £15 0 0 *Angelo Tamo: Verona 1623*

** Bound with another book.

213 NAPIER (John) RABDOLOGIA: or the art of numbering by rods, whereby the tedious operations of multiplication, and division, and of extraction of roots, both square and cubick, are avoided, being for the most part performed by addition and subtraction. [Edited and translated] by Seth Partridge. 12mo, contemporary sheep, with the book-ticket of Robert Paterson, M.D., Leith. £6 10 0 *Robert White for John Partridge: London 1648*

** D.N.B. xv. 433.

214 NEWTON. MARTIN (B.) A PLAIN AND FAMILIAR INTRODUCTION to the Newtonian philosophy. Sm. 8vo, numerous folding diagrams, wrapper. 10/- *J. Owen: London 1754*

215 [PHILPOT (Thomas)] A PHYLOSOPHICAL ESSAY, treating of the most probable cause of that grand mystery of nature, the flux and reflux, or flowing and ebbing of the sea. Sm. 4to, wrapper, lower edges uncut. £4 0 0 *T.M. [? Thomas Milbourn] for T[homas] Passinger [I]: London 1673*

** Plomer: *Dict. of Printers*, 1641-67, p. 145, and 1668-1725, p. 205.

MATHEMATICS—*continued*.

216 NORWOOD (Richard) TRIGONOMETRIE: or the doctrine of triangles: divided into two bookes: the first shewing the mensuration of right lined triangles: the second of sphericall: with the grounds and demonstrations thereof. Both performed by that late and excellent invention of logarithmes, after a more easie and compendious manner, than hath been formerly taught. Whereunto is annexed (chiefly for the use of SEAMEN), a treatise of the application thereof in the three principall kindes of sailing; with certaine necessary tables used in navigation. Sm. 4to, 4 ll., 129 pp., 1 p., 90 ll. (including one of errata), original limp vellum, with ties (two missing). FINE UNPRESSED COPY IN THE ORIGINAL STATE. £38 0 0 William Jones: London 1631
** FIRST EDITION. VERY RARE.

217 PARKINSON (T[homas]) A SYSTEM OF MECHANICS and hydrostatics. 4to, diagrams, contemporary half calf. 10/-

J. Archdeacon for J. and J. Merrill [etc.]: Cambridge 1789

218 POLENI (Giovanni, *Marchese*) DE CASTELLIS, per quae derivantur fluviorum aquae, habentibus latera convergentia, liber. Quo etiam continentur nova experimenta ad aquas fluentes, et ad percussione vires pertinentia. 4to, one folding plate, one woodcut diagram, device on title, contemporary limp boards, with the bookplate of W. C. Mylne. (Not in the Franks Catalogue). £1 8 0

Josephus Cominus: Padua 1718

** FIRST EDITION. William Chadwell Myene (1781-1863), engineer and architect; engineer to the New River Company, 1811-1861; much engaged in engineering projects with water supply and drainage.

219 PTOLEMAEUS (Claudius) LIBER DE ANALEMMATE [translated into Latin from the Arabic version]. A Federico Commandino Urbinate instauratus, et commentariis illustratus, qui nunc primum ejus opera e tenebris in lucem prodit. Ejusdem Federici Commandini liber de horologiorum descriptione. Sm. 4to, device on title, numerous diagrams, a few leaves slightly stained, contemporary limp vellum. With the Canterzani book ticket. £4 5 0

Paulus Manutius: Rome 1562

** Brunet iv. 948-949; Bib. Sunderland 10359; Renouard: *Annales des Aides*, p. 187, No. 13: "Ce traité de Ptolémée, traduit en Latin, avoit été découvert quelques années avant par le Pape Marcel III., lorsqu'il étoit encore Cardinal, ainsi que l'éditeur nous l'apprend dans sa préface au Card. Ranuzio Farnese." Brit. Mus. Cat. Extract: "Ptolemaeus," col. 5. Cajori: *Hist. of Maths.*, p. 48: Ptolemy wrote a monograph on the analemma which was a figure involving orthographic projections of the celestial sphere on three mutually perpendicular planes (the horizontal, meridian and vertical circles. The analemma was used in determining positions of the sun, [and] the rising and setting of the stars." Houzeau and Lancaster: *Bib. de l'astron.* 3071 (under *Traité de l'astrolabe*): "Version Latine faite sur la traduction Arabe. Le texte Grec est perdu. Le traité de Commandin sur les cadrans solaires est un des premiers ouvrages de gnomonique. Delambre: *Hist.* 1817, 458." Fabricius: *Bib.*

MATHEMATICS—*continued*.

Graeca, V. p. 291, No. 9: "HUNC LIBRUM NONDUM VIDI." Hoffmann: *Lex d. Griech. Litt*, III. p. 222. Zeitlinger: *Bibl. Chem. Math.* 3855: "THE ONLY EDITION PUBLISHED." Graesse, V. 498. Ebert 18258. *Encyc. Brit.* XXII. 623. *Nouv. Biog. Gén.* XLI. Col. 160. *Biog.* XXXIV. p. 495, No. 3. Zedler XXIX. p. 1118. Not in Watt or Poggendorff: *Lex. d. exacten Wissensch.*

220 PTOLEMAEUS (Claudius) HARMONICORUM LIBRI TRES. Recensuit, edidit, versione, & notis illustravit Johannes Wallis [*Gr. et Lat.*] 4to, full-length portrait of Ptolemaeus with musical instruments by SAVAGE, and engraved view of the Sheldonian Theatre on title, numerous woodcut diagrams, and a great number of tables (some on copper), maroon straight-grain morocco, gold and blind borders on sides, gilt back, by STORR, with his ticket; A FINE COPY. £2 0 0

E Theatro Sheldoniano: Oxonii 1682

** Lowndes 2005: "A good edition." Brunet IV, 950.

221 PRINCIPES DE L'ARITHMETIQUE. PRINCIPES DE GEOMETRIE NECESSAIRES A L'ARCHITECTURE MILITAIRE, VULGAIREMENT APPELEE FORTIFICATION. PRINCIPES DE PERSPECTIVE. Folio, *Manuscript on paper*, about 90 leaves in a running hand, with geometrical designs, old vellum. £7 0 0 18th Cent.

222 RAMSDEN (John, *Mathematical Instrument Maker*) DESCRIPTION OF AN ENGINE FOR DIVIDING MATHEMATICAL INSTRUMENTS. Published by Order of the Commissioners of Longitude. 4to, four copper-plates, cobb boards. £1 10 0

William Richardson for John Nourse: London 1777

** FIRST EDITION. Watt 789a (with a slight variation in the title).

223 RATHBONE (Aaron) THE SURVEYOR. Sm. folio, some leaves water-stained and a few margins frayed, fine engraved title by WILLIAM HOLE, portrait of Charles I. as Prince of Wales by DELARAM and of the author by SIMON DE PASSE, numerous woodcut diagrams and initials, stained, boards. £2 2 0

W. Stansby by W. Burre: London 1616

** Lowndes 2052.

224 SAUVEUR ([Joseph]) ELEMENS DE GEOMETRIE. 4to, manuscript, diagrams, old marbled calf. 15/- [18th Cent.]

225 SCHOTT (Gaspar, S. J.) PANTOMETRUM KIRCHERIANUM: hoc est, Instrumentum geometricum novum, a . . . P. Athanasio Kirchero antehac inventum. Sm. 4to, frontispiece, folding plates, old calf. £3 10 0 *J. Hertz: Herbipoli* 1660

** FIRST EDITION. Brunet v. 219. This is the issue with the frontispiece bearing Cholinus' imprint.

MATHEMATICS—*continued*.

226 SIMPLICIUS: COMMENTARII IN OCTO ARISTOTELIS AUSCULTATIONIS LIBROS cum ipso Aristotelis textu. Folio, Greek letter, device on title, and at end, old calf, gilt panels on sides. Wodhull's copy, with his notes on fly-leaf. £2 0 0

In aedibus Aldi et Andreae Asulani Soceri: Venice, October 1526

* FIRST EDITION. Brunet v. 398.

227 SMITH (David Eugene) RARA ARITHMETICA. A catalogue of the Arithmetics written before the year MDCI with a description of those in the library of George Arthur Plimpton of New York. Royal 8vo, fully illustrated with facsimiles, original blue cloth, paper label, partly unopened. £2 8 0 *Ginn and Company: Boston 1908*

** The standard bibliography of its subject. There are few arithmetics of much importance that are not found in one edition or another in this collection.

228 SWYMMER (Anthony) THE MANNER HOW TO ALTER BIGUES OF ROPE and how to double any Rope Cable or Mast by The Extraction of the Square Root.—How to builde Shippes by Proportion.—Certaine Questions, Arithmetically concerning the office of the Master of Ordinance, etc.—And other Mathematical and Astronomical Pieces. Original Manuscript of 51 ll., small 4to, very neatly written on paper with carefully drawn diagrams and tables, wrappers. £5 0 0
[circa 1636]

229 TAYLOR (Thomas, *the Platonist*) THE ELEMENTS OF A NEW METHOD OF REASONING IN GEOMETRY. 4to, 7 plates, some folding, calf. £10 10 0 *For the Author: London 1780*

** FIRST EDITION. Thomas Taylor's earliest publication (D.N.B. xix. 468).

230 TETRAGONISMUS: ID EST, circuli quadratura, per Campanum, Archimedes Syracusanum atq; Boetium mathematicae perspicacissimos adinuenta [Cura Lucae Gaurici]. Sm. 4to, Roman letter, large symbolical woodcut on the title-page, and Sessa's "Cat and Mouse" device, also another device below colophon, numerous diagrams and fine Italian woodcut initials, half vellum. £5 10 0

J. B. Sessa: Venice 1503

** The famous and still unsolved problem of the quadrature of the circle is perhaps the sole survivor of the riddles which the greatest intellects of the Middle Ages tried to answer.

MATHEMATICS—*continued*.

231 TUNSTALL (Cuthbert) DE ARTE SUPPUTANDI LIBRI QUATUOR, Cutheberti Tonstalli. [Device], 4to (8 by 5½ in.), Roman letter, 259 pp. (a-p 8 q 10), contemporary calf. £10 10 0

Robert Estienne: Paris, October 16, 1538

** Cooper, *Ath. Cantab.*, 1, 202, 2. The first edition, printed by Pynson, was the first book on arithmetic published in England. Karslake, *Notes from Sotheby's*, p. 366, speaking of the 1529 edition: "In the preliminary epistle to SIR THOMAS MORE [which also occurs in this edition] Tunstall gives a curious account of the origin of this work. It seems that, in his dealings with certain goldsmiths or silversmiths, he suspected that the accounts were fraudulently prepared, and therefore he made a special study of the forgotten science of his boyhood—arithmetic—in order to be able to check their figures. The result of his labours was a book for his own use, which, on being appointed Bishop of London, he considered worthy of being printed for the use of others." Lowndes, 2719. Allibone, 2374, 2. Watt, 618u. Dict. Nat. Biog. xix. 1241, 1. Brit. Mus. Gen. Cat. "T." xxxix, 192. De Morgan, *Arithmetical books*, p. 13, who, however, does not mention this edition: "This book is a farewell to the sciences, on the author's appointment to the See of London (see the preface): it [the first edition of 1522] was published (that is, the colophon is dated) on the 14th of October, and on the 19th, the consecration took place. This book is decidedly the most classical which ever was written on the subject in Latin, both in purity of style and goodness of matter."

232 THE USE OF THE STAFFE, and first for numeracion: The arte of dyallinge on the staffe: The art of dyallinge by logarithmes: Decimall chayne. Sm. 4to, manuscript on 26 leaves of paper, numerous diagrams, half calf. £18 10 0

[*Writer unknown*]? Somerton [Somerset], c. 1640

** This manuscript is interesting as shewing the early use of logarithms. There is no indication of the writer but the notes appear to be original and unpublished. The only clue to locality is on the reverse of the 19th leaf, where we have a reference to the latitude of Somerton; this probably being the village in Somerset. With regard to date the writing might be as early as the last decade of the 16th century, but Napier did not publish his work in logarithms until 1614, and they are here referred to as a matter of common knowledge; on the reverse of leaf 17 we have the date 1640 attached to a diagram, and this is very probably about the time the book was written.

PROVENANCE: Eighteenth century bookplate of R. H. Alexander Bennet.

233 WALLIS (John) A DISCOURSE OF GRAVITY AND GRAVITATION, grounded on experimental observations. Sm. 4to, folding plate, wrapper. £2 10 0

J. Martyn: London 1675

** Newton was at this time at work on the problem of gravitation, and the subject had become one of general interest.

234 WALLIS (John, D.D.) A DISCOURSE ON GRAVITY AND GRAVITATION. [*Another copy*], cropped, lower margin slightly dry-rotted. £1 0 0

J. Martyn: London 1675

MATHEMATICS—*continued*.

235 WELPER (Eberhard) ELEMENTA GEOMETRICA. Sm. 4to, title printed in red and black, woodcut initials and ornaments, errata leaf, and 32 copperplates of diagrams, old vellum. 15/-

Eberhard Welper: Strassburg 1630

** FIRST EDITION. Watt, *Bibliotheca Britannica*, Vol. II, Col. 957i.

236 WHITE (Thomas) EUCLIDES METAPHYSICUS sive de Principiis Sapientiae Stoecheidea, Et Exercitatio Geometrica. Demy 8vo, folding plate, old sheep. 10/-

Jo. Martin: London 1658

** FIRST EDITION. With separate title-pages and pagination. Watt, *Bibliotheca Britannica*, 946b.

237 WILLIAMS (Thomas) AN ENTIRE NEW WORK, and method of proceeding to discover the variation of the earth's diameters. 4to, wrapper. 6/-

[*For — Stockdale and the author:*] *London 1786*

** The publishers are given in accordance with a note on the title of this copy.

238 WINGATE (Edmund) ΛΟΓΑΡΙΘΜΟΤΕΧΝΙΑ: or the construction and use of logarithmetically tables. 16mo, contemporary limp vellum, gilt, remains of ties, FINE COPY from the Sheppard collection.

£4 5 0

Miles Flesher: London 1635

METEOROLOGY.

239 DINGLEY (Robert) VOX COELI; or philosophical, historical and theological observations of thunder. 12mo, leaves browned, lower border of title cut into, cobb boards, red label. £1 18 0

M[ary] S[immons] for Henry Cripps: London 1658

** Ronalds 137. Hazlitt ii. 178.

240 FINCH (Heneage, *Earl of Winchelsea*) A TRUE AND EXACT RELATION of the late Prodigious Earthquake and Eruption of Mount Aetna, or Monte-Gibello. . . . Together with a more Particular Narrative of the same, as it is collected out of Severall Relations sent from Catania. Sm. 4to. Folding frontispiece by HOLLAR [not in Parthey, but see Evelyn Diary, Wheatley, 1906, ii. p. 114, note], slightly soiled. Half sprinkled calf, gilt. £2 0 0

T. Newcomb: London 1669

** Hazlitt iii., p. 80. Allibone, p. 596. "This eruption was witnessed by His Lordship on his return from Constantinople." Not in Baratta.

METEOROLOGY—*continued*.

241 GILBERT (William, *Author of "De Magnete"*) DE MUNDO NOSTRO SUBLUNARI PHILOSOPHIA NOVA: Opus posthumum, ab authoris fratre [William Gilbert, of Melford] collectum pridem et dispositum, nunc ex duobus MSS. codicibus editum [by Isaac Gruter]. Sm. 4to, title printed in red and black, device (Minerva, owl and tree) on title, folding map of the moon, diagrams, contemporary calf, FINE COPY. £8 15 0 *Louis Elsevier: Amsterdam, 1651*

** This volume contains the posthumous meteorological essays (D.N.B. vii., p. 1217), the manuscript of which came into the possession of Sir William Boswell after the author's death. They were prepared for the press by the author's brother, William Gilbert, of Melford—who in the address to the reader explains the fact that he bears the same name as his brother by saying that such is the occasional practice in England—and subsequently edited by Isaac Gruter, who dedicates the book to Antonius Vivanus. Willems 1128.

242 HAMILTON (Hugh) PHILOSOPHICAL ESSAYS . . . on the Ascent of Vapours, the Formation of Clouds, Rain and Dew and on several other Phaenomena of Air and Water. Observations and Conjectures on the Nature of the Aurora Borealis and the Tails of Comets. On the Principles of Mechanicks. 8vo, folding plates, old marbled boards, new calf back. 18/- *John Nourse: London 1767*

243 HUMBOLDT (Baron Al. de) and BONLAND (A.) ESSAI SUR LA GEOGRAPHIE DES PLANTES; accompagné d'un Tableau Physique des Régions Equinoxiales, fondé sur des mesures exécutées, depuis le dixième degré de latitude boréale jusqu'au dixième degré de latitude australe, pendant les années 1799, 1800, 1801, 1802 et 1803. Imperial 4to, original boards, edges of leaves uncut and unopened. £1 15 0 *Levrault, Schoell et Cie: Strasbourg, 1805*

244 LICETUS (Fortunius) HYDROLOGIAE Peripateticae Disputationes. De Maris tranquillitate, arte per oleum, et anchoram comparanda. Deque ortu e montibus in Meteorologia propositio. Nec non de Lacus Asphaltitis in Syria stupendis proprietatibus utcunque ad fabulas relatis. 8vo, device on title, modern boards. £1 5 0

Nicolai Schirratti: Utini 1655

** Not in Brunet.

245 LICETUS (Fortunius) PYRONARCHA, sive de fulminum natura, deque febrium origine, libri duo: in quibus et fulminum in mundo magno, et febrium in mundo parvo causae naturales omnes, modus originis, idea, proprietates, differentiae ac effectus admirabiles accurate tractantur. Diligenter explicato vetere Gripho Pyronarchae a Coelio Igiano inter flores medicos descripto. Sm. 4to, 4 ll., 126 pp., 6 ll., boards, uncut, some leaves unopened. £1 10 0 *Crivellarius: Padua 1634*

** Not in Watt or Brunet.

METEOROLOGY—*continued*.

246 MIZAULD (Antoine) PHAENOMENA, sive aerae ephemerides
[and] meteorologia, sive rerum aeriarum commentariolus. Two works
in 1 vol., 12mo, old calf rebaked, with Arms on side. £3 15 0

R. Calderius: Paris 1546-7

** Inscription on title: Ex bibliotheca S. Coucis Parisiensis 1624. An
early book on weather forecasting.

247 OERTEL (Gottlob Friedrich) SICCITAS ANNI SUPERIORIS 1766
et aquarum diminutio insolita. Sm. 4to. 10/-

Carolus Christianus Dürrius: Wittenberg [1767]

** Not in the British Museum. On the unusual DROUGHT of 1766.

248 RUFFO (Salvatore) DE HORRENDO TEREAE MOTU, qui contigit
Panormi nocte post kalend. Sept., 1726, tractatus historicus, quem ex
Italico in Latinum sermonem conversum, adjecta praefatione atque
tabula urbis Panormi edi curavit G. Frid, Richter. Sm. 4to, folding
plan, wrapper. 12/6

Leipzig 1727

** A contemporary account of the terrible EARTHQUAKE which devastated
Parma in 1726.

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With a Particular Historical Account of those, and divers other Earth-
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For John Salusbury and Abraham Chandler: London 1693

** THE FIRST EDITION of Shower's first work.

251 STRANGE NEWS FROM FRANCE, being two letters
. . . giving an account of the late extraordinary tempest that lately
hapned there [Blois], accompanied with hail-stones as big as a man's
fist, whereby two churches and several houses were lamentably beat
down, many other lamentably shatter'd, the slates and windows through-
out the town batter'd to pieces, and all the corn and vines in eight
parishes utterly destroyed; to the damage of two hundred thousand
crowns and upwards. Sm. 4to, 8 pp., half calf, padded with blanks.

£3 0 0

For L. C.: London 1678

** An interesting meteorological tract.

METEOROLOGY—*continued*.

252 WINKLER (Johann Heinrich) DE COMMERCIO LUMINIS BOREALIS CUM ACU MAGNETICA. Sm. 4to. £3 5 0

Brietkopf: Leipzig [1767]

** RARE. Not in the British Museum. An essay on the effect of the aurora borealis on the magnetic needle — a contribution to the literature of MAGNETIC STORMS.

OPTICS.

253 ABRAHAM (Johann Friedrich) DISSERTATIO PHYSICA DE CAUSSA PELLUCIDITATIS. Sm. 4to. £1 5 0 *Hendel: Halle [1744]*

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Daniel Michael Schmatz for Johann Andreas Lorber: Erlangen 1710

255 BAKER (Henry) THE MICROSCOPE MADE EASY: or, I, The Nature, Uses, and Magnifying Powers of the best kinds of Microscopes Described, Calculated, and Explained. . . . II, An Account of what surprising Discoveries have already been made by the Microscope [etc.]. 8vo, 14 engraved plates, some folding, old calf. 10/-

R. Dodsley: London 1742

256 BOYLE (Robert) EXPERIMENTS AND CONSIDERATIONS TOUCHING COLOURS. 12mo, folding plate, contemporary sheep. Fine Copy. £2 5 0

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257 DESCARTES (René) LE MONDE DE MR. DESCARTES OU TRAITE DE LA LUMIERE et des autres principaux objets des Sens, avec un discours de l'action des corps & un autre des fièvres, composez selon les principes du même auteur. Pott. 8vo, old calf, gilt back, name on title. £3 3 0

Michel Bobin & Nicolas le Gras: Paris 1664

** Brunet, Vol. II., p. 611.

258 MAERKLIN (Johann Friedrich) DISPUTATIO PHYSICA DE INTENSITATE LUCIS. Sm. 4to. 10/- *Erhard: Tübingen [1754]*

** Not in the British Museum.

OPTICS—*continued*.

259 [NEWTON (Isaac, *Knight*)] OPTICKS: or a treatise of the reflexions, refractions, inflections and colours of light. Also two treatises of the species and magnitude of curvilinear figures. 4to, numerous diagrams, some folding, old calf rebaked. £7 15 0

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** FIRST ENGLISH EDITION of the *Opticks*, and FIRST EDITION of the tract on differential calculus. The second tract, in Latin, entitled *Enumeratio linearum tertii ordinis*, is Newton's exposition of his invention of fluxions, or differential calculus. This publication gave rise to the long drawn out controversy with Leibnitz, in which each is accused of borrowing from the other. For a detailed account of this affair see the *Dictionary of National Biography*, thin paper edition, Vol. XIV., pp. 387-389 and p. 392. The *Dictionary of National Biography* sums up: "The main facts of this controversy establish without any doubt that Newton's invention of fluxions was entirely his own. It is not easy to decide how much Leibnitz owed to Newton."

260 NEWTON (I.) [ALGAROTTI (Francesco)] IL NEWTONIANISMO PER LE DAME, overo, Dialoghi sopra la luce e i colori. 4to (85/8 by 6 3/16 in.), frontispiece, by Marco Pitteri [Bryan, vol. 4, p. 130], after G. B. Piabbeta [Bryan, vol. 4, p. 112]. Contemporary vellum. FINE COPY. £1 0 0

Naples 1737

** FIRST EDITION. Gray, *Bib. of Newton*, p. 197. This book illustrates Newton's optics. Hypotheses in relation to light and colour: sight: confutation of Descartes' theory: Newton's Law of Gravitation.

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263 PRIESTLEY (Joseph, LL. D.) THE HISTORY AND PRESENT STATE OF DISCOVERIES RELATING TO VISION, light and colours. By Joseph Priestley, LL.D., F.R.S. *Facta est immensi copia mundi*. Ovid. 4to, folding plates, some pencil notes, contemporary tree calf, gilt, green edges. £8 10 0

For J. Johnson: London 1772

** FIRST EDITION. COLLATION: [7 ll.] + a, b, A—5 H 4 xiv + xvi + 812 + [12] pp. 25 plates. D.N.B. xvi. 372.

